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THE BRITISH PTERIDOLOGICAL SOCIETY

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Edited by A.M. Paul

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THE BRITISH PTERIDOLOGICAL SOCIETY

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The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and is still a focus for fern enthusiasts, its wide membership including gardeners, nurserymen and botanists, both amateur and professional. It provides a wide range of information about ferns through its publications and website, and also organises formal and informal indoor meetings, field meetings, garden visits, a plant exchange, a spore exchange and fern book sales. The Society's journals, *The Fern Gazette*, *Pteridologist* and *Bulletin*, are published annually. *The Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist*, topics of more general appeal, and the *Bulletin*, Society business and meetings reports. **Website: www.eBPS.org.uk**

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(**Front cover**: *Platycerium superbum*. Illustration from: B.S. Williams (1868) *Select Ferns and Lycopods* (as '*Platycerium grande*'.))

Back numbers of *The Fern Gazette*, *Pteridologist* and *Bulletin* are available for purchase from P.J. Acock, 13 Star Lane, St Mary Cray, Kent BR5 3LJ; E-mail: BackNumbers@eBPS.org.uk

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NATIONAL FIELD MEETINGS

EASTERN AUSTRALIA – 13-30 April

VICTORIA

Monday 13th – Arrival day **Jennifer Ide**

The major part of an international group of twelve members of the BPS met in the late morning at Melbourne Airport, Victoria. After picking up hire cars we drove out to our motel at Macedon, approximately 35 kilometres north-west of Melbourne. We booked in and drove out to Mt Macedon – more a large hill than a mountain – for our first ferning excursion. After light refreshments at the restaurant near the summit, we walked to the top to enjoy the extensive view over the surrounding area of bush before working our way back to the cars, searching out the few ferns, all of which we would see again in the coming days. After a brief rest back at the motel we had an excellent meal at the pub restaurant of a brewery in Woodend, about five kilometres from Macedon.

Tuesday 14th – 'Austral Ferns' Nursery & The Grey River Reserve, Otway National Park
Klaus Mehltreter

photo: M. Boudrie

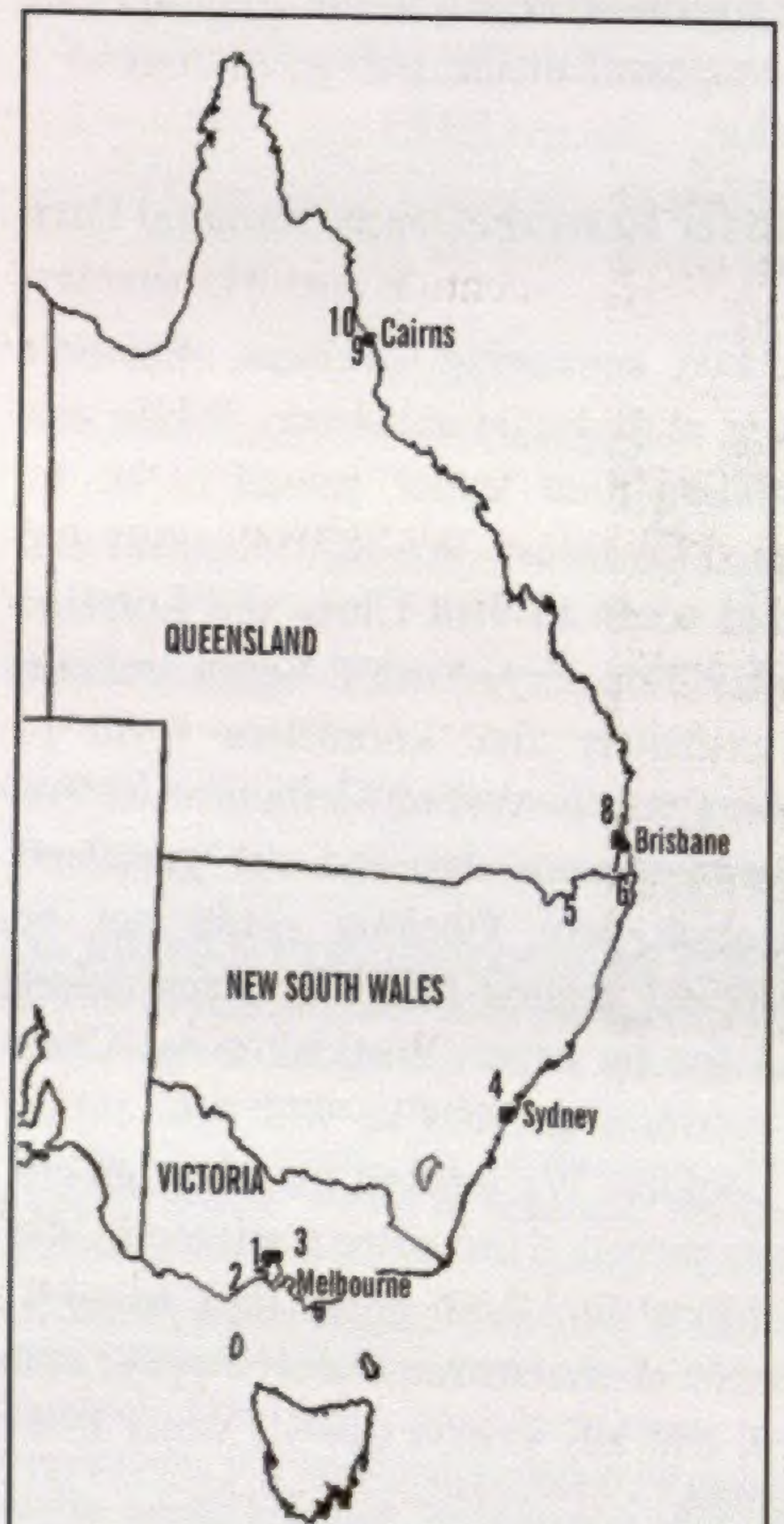
***Platycerium superbum*, Austral Ferns, Victoria**
Chris Goudey & Robert Sykes

The two remaining overseas members arrived at midnight and Barry White, our Australian joint leader, joined us as we finished breakfast. We left Macedon and headed south to visit Chris and Lorraine Goudey's nursery, Austral Ferns, in Lara, approximately five kilometres north of Geelong, south-west of Melbourne. It was a warm autumn day and the grassland vegetation near Geelong could not be considered a good place for ferns unless cared for by expert horticulturists! Chris and Lorraine greeted us with tea, coffee and cookies. We learned that their greenhouses provided the correct microclimatic conditions for their great fern nursery. Because of the scarce water supply, rain water falling on the roofs of the greenhouses is collected, and any excess run-off water from irrigating the plants in the greenhouses is caught and recycled.

Chris and Lorraine specialise in maidenhair ferns such as *Adiantum compactum*, *A. cordatum*, *A. micropinnulum* and *A. raddianum*, and propagate a large number of varieties. Additionally,

they cultivate a huge number of other species, including *Blechnum patersonii* with entire strap-like leaves, *B. moorei*, a trunk-forming fern from New Caledonia, the climbing fern *Lygodium japonicum*, and varieties of *Pteris cretica*. Epiphytic species included the Japanese felt fern, *Pyrrosia polydactylis*, *Scyphularia pentaphylla* and several species of *Aglaomorpha*. I was impressed to see that ants in the greenhouses had found the few nectar-bearing glands at the pinna bases of some of the *Photinopteris* species. Other spectacular plants were the tiny *Lemmaphyllum microphyllum* var. *cristatum* with leaves about one centimetre long, and the very unusual *Diplazium tomitaroanum* from Japan. If evidence for the horticultural capabilities of the owners was needed, their plants of *Gleichenia microphylla*, a common species in the wild but very difficult to cultivate, would surely provide it. After observing so many cultivars, I was especially impressed by the large tree ferns such as *Cyathea kermadecensis* from Kermadec Island and *C. baileyana*. The latter species was my favourite; this was the first time I had seen aphlebiae, the reduced basal pinnules found on some tree ferns and which looked more as if they were another species growing epiphytically on the tree ferns. Indeed, in the past some aphlebiae have been described as new species of filmy ferns!

Perhaps the most impressive ferns were hanging in the yard: *Platycerium bifurcatum*, *P. superbum* and *P. veitchii*. *Platycerium* is mainly of Asiatic distribution but these three species are native to Australia. *Platycerium* has heteromorphic leaves: flat humus-accumulating 'niche' (or 'nest') leaves and pendulous to ascending, sporangia-bearing leaves. *P. bifurcatum* branches quite frequently and builds up huge colonies with dozens of leaf clusters. Their niche leaves quickly turn brown and their hanging leaves bear the sori near the leaf tips. *P. superbum* grows from one rhizome tip with their ascending green niche leaves forming a huge basket, and their hanging leaves produce sori on a central lobe. *P. veitchii* has ascending, grey-green spore-producing leaves. The greyish colour comes from the dense indument of stellate hairs.



Areas visited – BPS trip to eastern Australia, 2009

1. Chris Goudey's 'Austral Ferns'
2. Otway National Park (NP)
3. Kinglake Ranges and Healesville
4. Blue Mountains
5. New England
6. Boonoo Boonoo NP
7. Cunningham's Gap (Main Range NP) & Springbrook NP
8. Brisbane Forest Park & Mt Glorious
9. Atherton Tableland
10. Mount Lewis State Forest

Note: Due to problems of scale it is possible to show only the approximate positions of the areas visited.

On the way to our next stop in the Otway National Park we were lucky to see some wild koalas moving around in the *Eucalyptus* trees. The Grey River Reserve within this National Park holds an astonishing abundance of ferns. The trail ran alongside a creek, which provided a high relative humidity below the canopy of the *Eucalyptus* and *Nothofagus* forest. The understorey is completely dominated by tree ferns, *Dicksonia antarctica* being by far the most common, with the rarer *Cyathea australis* growing amongst them. On the tree fern trunks, epiphytes such as *Ctenopteris heterophylla*, *Grammitis billardierei*, *Hymenophyllum australe*, *H. flabellatum* and *Crepidomanes* (*Trichomanes*) *venosum* abounded. Other

frequent terrestrial species were *Rumohra adiantiformis* and *Polystichum proliferum*. Scattered among these were several species of *Asplenium*, *Blechnum* and *Lastreopsis*.

The light faded quickly in the creek gully towards the end of the afternoon and we headed for our motel, travelling along one of the most beautiful roads in Victoria, the Great Ocean Road, reaching Apollo Bay just before dark.

Wednesday 15th – Mait's Rest & Melba Gully, Otway National Park **Annie Prelli**

After a very strong storm at 4a.m. that kept everybody awake, we were lucky to have an almost rain-free day to visit again the Otway National Park, south-west of Apollo Bay. Our first stop was at Mait's Rest, named after Maitland Byrne, a Forest Commission's Officer who rested his horse in the area regularly in the early 1900s. Perhaps he stopped because the place had woven its particular enchantment over him. This beautiful reserve was created in 1958 and is a very good example of a Victoria cool temperate rainforest. The dominant trees are myrtle beeches (*Nothofagus cunninghamii*) whose interlaced leaves form a protective canopy sheltering the plants beneath from wind and intense sunlight. Along the remarkably arranged paths, our interest was mainly in the gullies, in which *Dicksonia antarctica* formed almost pure populations. These giant ferns spread their fronds to catch the filtered light. Some *Cyathea* grew along with them, in particular the very interesting *C.* × *marcescens* (the hybrid between *C. australis* and *C. cunninghamii*; identification confirmed by Martin Rickard). Important populations of epiphytic ferns covered the trunks of the tree ferns, among them *Asplenium bulbiferum*, *Ctenopteris heterophylla*, *Grammitis billardierei*, *Crepidomanes venosum* and *Tmesipteris obliqua*. On the ground, blechnums were abundant, in particular *B. chambersii*, *B. fluviatile* and *B. wattsii*, along with *Lastreopsis hispida*.

At the second stop, known as Beauty Spot, we had hoped to see *Todea barbara*. Unfortunately, Barry could not find the small population that he had found there a few years ago. This disappointment did not last long, as we were to find this species in great numbers during the following days. The only novelty at this short stop were the charming little leeches…

photo: A. Prelli

***Dicksonia antarctica*, Melba Gully, Victoria**

Melba Gully, named after the famous late 19th-century Australian opera singer, was our next stop. It is a stunning remnant of the original ancient Otway rainforest. Here, the vegetation was dominated by tree ferns, *Dicksonia antarctica* mostly, with *Cyathea australis*, *C. cunninghamii* and their hybrid. Their trunks were covered by epiphytes, with a great variety of filmy ferns: *Hymenophyllum australe*, *H. cupressiforme*, *H. flabellatum*, *H. rarum* and *Crepidomanes venosum*. Also to be seen were two climbing species: *Microsorum pustulatum* and *Rumohra adiantiformis*. There was a great variety also of terrestrial ferns; as well as the aforementioned species let us name *Blechnum minus*, *B. nudum*, *Gleichenia dicarpa*, *Hypolepis glandulifera*, *Lastreopsis acuminata*, *Pteris tremula*, *P. umbrosa*, *Sticherus lobatus* and *S. urceolatus*.

After lunch, Les and Rosemary Vulcz made us very welcome at their tree fern nursery. An interesting couple of hours were spent with them, admiring their marvellous dicksonias and

walking around their property. We were offered a nice buffet and hot tea before taking the long road to Macedon, where we arrived late, tired but happy, after an excellent day.

Thursday 16th – Fern Acres Nursery, Kinglake; Wirrawilla Rainforest, Kinglake; Badger Weir, Yarra Ranges National Park **Robert Sykes**

A three destination day with, as ever, plenty of driving. We visited the Fern Acres nursery, where Eddie and Robyn Sabljack welcomed us. Mirini Lang, a member of the Victorian Fern Society, joined us from Melbourne with her son, significantly reducing the average age of the party. Fern Acres supply the wholesale and retail markets and has a wide selection of tree ferns and smaller ferns, mostly Australian, including a range of blechnums such as the appealing *Blechnum wattsii* × *B. minus* cross, and an elegant crested *B. nudum*. British ferns were mostly cultivars such as various *Dryopteris* forms, *Asplenium trichomanes* 'Cristatum' and *Blechnum spicant*, both crested (rare in the UK) and imbricate. They buy in many young plants and grow them on in a crowded polytunnel (a new one is planned). The potting mix for more mature plants includes a slow release fertiliser, topped up with a few chicken manure capsules. So many things I would have liked in my garden...

photo: B. White

Regenerating *Cyathea australis* and gum tree shoots after fire, Kinglake, Victoria

Kinglake, approximately 50 kilometres north-east of Melbourne, was in the heart of the recent appalling fires, which caused many deaths. The signs were everywhere, dwellings reduced to a chimney and a few buckled sheets of corrugated iron, burnt out cars and mile on mile of charred woodlands. A few weeks on, some of the eucalyptus had drifts of new green foliage up the trunks, and the tree ferns, *Pteridium esculentum* and the occasional *Polystichum proliferum* were throwing up fresh green fronds, tokens of hope in the desolation.

After lunch in Healesville some of the party opted for the Healesville Sanctuary, which specialises in Australian fauna, enviably coming back with reports of platypus, but most of us went to the Wirrawilla Rainforest Walk (only recently accessible after the area was closed because of the fires). It had been spared and proved a delightful cool fern-rich refuge, though some brown fronds betrayed the recent drought. From boarded walks on each side of a stream we saw no new species, but there were some fine drifts of *Sticherus urceolatus* and the narrow straps of *Grammitis billardierei* were notably abundant on the mossy tree trunks.

The final site, Badger Weir in the Yarra Ranges National Park, was a more extensive stream-side walk, which yielded several species new to us, two blechnums that both proved to be common further north – *B. cartilagineum* (the unappealing common name is gristle fern) and *B. patersonii*, the magnificent *Diplazium australe* and *Tmesipteris*, either *T. parva* or *T. elongata*. There was a single plant of *Pteris tremula*. We were dubious as to whether some plants were *Calochlaena dubia* or *Hypolepis muelleri*. Unfortunately we were timed out from this fascinating area and did not have time to resolve these problems or look further – the gates closed at 5.30.

NEW SOUTH WALES

Friday 17th – State Herbarium, Sydney Botanic Gardens **Jennifer Ide**

A five o'clock rise was necessary for us to catch our flight to Sydney. Our hotel, the North Sydney Harbourview, was on the shore of the harbour and we all had rooms with wonderful

views of the bridge and the harbour, apparently at the request of our travel agent. With the rest of the morning free, we walked across the bridge into central Sydney, enjoying the magnificent views as we did so and looking with incredulity at the tourists climbing to the crest of the bridge's suspension span. After a light lunch, folk made their way across the Botanic Gardens on the south shore of the harbour to the New South Wales State Herbarium. We gathered in the entrance lobby, where we were met by Peter Hind, recently retired Assistant Botanist, who would be our guide for part of the afternoon and the next three days in the Blue Mountains.

After some much appreciated refreshments – the outside temperature being in the 90s Fahrenheit – we were welcomed by Dr Elizabeth Brown, who introduced us to Professors John Thomson and Carrick Chambers who each gave a presentation. John Thomson is an ex-Professor of Sydney University and now, in retirement, an honorary research worker at the Herbarium. He reviewed the history of the taxonomy of bracken and concluded by summarising the present classification, which divides the one-time world-wide species *Pteridium aquilinum* into two diploid species ($2n = 104$), *P. aquilinum* and *P. esculentum* (which in turn are split into eleven and two subspecies respectively), and two tetraploid species ($4n = 208$), *P. semihastatum* and *P. caudatum*. Each taxon has its own distinct distribution in the world. Carrick Chambers, also an honorary research worker, reviewed the current state of the taxonomy of the genus *Blechnum*, a group that had fascinated him from the beginning of his research career and, despite being diverted onto other work, he persisted when he was able with his morphological and cytological studies of the genus. He explained that blechnums fall into two distinct morphological types, which is reflected cytologically: those with creeping rhizomes being $2n = 56$, while the caudex types are $2n = 66$. He then described the sub-groups within each of these types.

After the talks, Katherine Downs, the curator, showed us around the Herbarium where interesting specimens had been set out for us to see. The Librarian, Miguel Garcia, had arranged a display of some of the more interesting early pteridological volumes from their collection. A packed afternoon finished with a visit to the Fern House, guided by Peter Hind. A wide range of ferns, especially from the Australian flora and including tree ferns, were attractively displayed intermixed with a small selection of flowering plants and palms. Many of the ferns we were to see during our trip, especially when we explored the more subtropical areas of northern New South Wales and Queensland.

Saturday 18th – Peter Hind's garden at Mt Druitt; Fairy Grotto & Grose Valley, Pierces Pass (Blue Mountains) **Martin Rickard**

photo: M.H. Rickard

Peter Hind with *Blechnum nudum* × *Doodia aspera*

Peter Hind lives some distance from Sydney at Mt Druitt, close to the Blue Mountains. Peter grows an amazing collection of ferns and his botanical interest was strongly reflected in the emphasis on interesting species rather than the obviously attractive ones. The house stood out, with a front garden full of huge palms and one or two tall tree ferns, probably *Cyathea cooperi*, they were too tall to check! At the back Peter had several shade areas full of ferns. All were arranged very tidily by genus. There were so many highlights here but the one that stood out most was a new intergeneric hybrid – *Blechnum nudum* × *Doodia aspera*. *Doodia* is not a genus that fills me with enthusiasm but Peter's collection could change that – he had

a very nice pinnatifid form of *D. aspera.* Another treasure was the rather rare *Polystichum fallax.* One of the themes running through his collection was the large number of species from Lord Howe Island; my favourite was *Cyathea robusta.*

After refreshments kindly provided by Peter and his local fern enthusiasts we drove off to the Fairy Grotto and Grose Valley in the Blue Mountains. This was a stunning walk! In a narrow, dark valley deep in the bowels of the mountain we found one of the star plants of the whole trip, that relative of the New Zealand Prince of Wales Feather, *Leptopteris fraseri.* It was abundant in rock crevices and on the valley bottom where it produced thick trunks up to two feet high. Unfortunately in the poor light it was extremely difficult to get good photographs. *Todea barbara* was abundant in similar habitats, often with large trunks several feet tall in the darker more humid sites; again difficult to photograph. *Hymenophyllum australe* was rarish and looked rather different from how I remembered it in the Otways. Much rarer was the very small *Sphaerocionium* (*Hymenophyllum*) *lyallii*, which was difficult to pick out from the liverworts and mosses growing on the rocks. *Pyrrosia rupestris* grew sparsely on the tops of some of the rocks, quite a contrast to the huge colonies we saw the next day by the main road just north of Katoomba. Other interesting species included *Cyathea australis*, *Asplenium flabellifolium*, *Lastreopsis acuminata*, *Pellaea nana* and *P. falcata* (if they really are different!), *Gleichenia dicarpa*, *Sticherus lobatus* and *Hymenophyllum cupressiforme.*

After a full but good day, we made our way to Katoomba where we were to stay for the next three nights.

Sunday 19th – Wentworth Falls, Valley of the Waters; Adelina Falls, South Lawson Park (Lower Blue Mountains)

Michel Boudrie

Our guide, Peter Hind, was waiting for us at the start of the trail to the Wentworth Falls (900 metres on the plateau, to 830 metres in the bottom of the valley). Within the sclerophyllous *Eucalyptus – Banksia* forest were limited populations of *Lycopodium deuterodensum* and *Asplenium flabellifolium*. Along the trail occurred *Lindsaea microphylla*, *Pteridium esculentum*, *Sticherus lobatus* and *Gleichenia microphylla*. Lower down the valley, *G. rupestris*, *G. dicarpa* and *Todea barbara* were growing on or at the base of seeping rock-faces. Several lookouts allowed us to admire the deep valley bordered by very high and vertical sandstone cliffs, their orange colour contrasting with the misty blue of the farthest mountains – blue due to the *Eucalyptus* tree canopy of their forest cover.

We then descended the very steep flanks of the valley via a succession of flights of steps. Further down, the trail crossed several gullies with pretty waterfalls, which were host to ferns such as *Blechnum cartilagineum*, *Grammitis stenophylla* and *Hymenophyllum cupressiforme* on wet and mossy boulders, *Todea barbara* again, *Blechnum wattsii* on the ground, and *Leptopteris fraseri*. But the news of the day was the rare endemic *Blechnum gregsonii*, recognised by its long sterile fronds and fertile pinnae more than half as broad as the sterile ones, growing on seeping rock-faces and banks, and a few plants of the small *Schizaea rupestris* growing in wet conditions, uncommon for Schizaeaceae, on a small ledge in the cliff.

Finally, we reached the bottom of the valley with its succession of terraces and impressive high waterfalls – Empress Falls, Sylvia Falls and others. As usual, this kind of landscape was paradise for enthusiastic pteridologists, with tree ferns (*Cyathea australis*) and many other ferns: *Leptopteris fraseri* hanging on wet steep cliff-faces, *Sticherus lobatus*, *Todea barbara*, *Hymenophyllum cupressiforme*, *Gleichenia rupestris*, *Asplenium flabellifolium* on boulders, and several *Blechnum* species: *B. wattsii*, *B. nudum*, *B. patersonii*, *B. gregsonii* and possibly *B. ambiguum.* Then, with the rain arriving, it was time to go back to the top for a quick lunch at the tea shop and to dry out a bit!

We next moved on to South Lawson Park (670 metres), nine kilometres east of Wentworth Falls and 15 kilometres east of Katoomba. The Upper Cataract Falls on Cataract Creek near the beginning of the trail were surrounded by sclerophyllous forest. *Blechnum wattsii*,

Gleichenia rupestris and *Todea barbara* occurred around the falls. *Gleichenia microphylla*, *Cheilanthes sieberi*, beautiful specimens of the finely dissected and light green *Lindsaea microphylla*, *Pteridium esculentum* and *Blechnum minus* accompanied us on the banks of the trail. *Sticherus flabellatus* was observed in the vicinity of Lower Cataract Falls. Then the trail followed the rather flat Cataract Creek valley, in a mosaic of sclerophyllous forest and denser rainforest. The banks of the river were extremely rich in large populations of *Todea barbara* in its true habitat, reflected in the fronds of three metres or more in length arching over the creek! Abundant populations, too, of *Blechnum nudum* and *Calochlaena dubia* (a plant rather difficult to distinguish, at a first glance, from *Hypolepis*) occurred along the valley, together with *Blechnum ambiguum*, *B. cartilagineum* and *B. minus*, *Sticherus flabellatus*, *S. lobatus* and *Cyathea australis*.

We then arrived at the cirque of Federal Falls, with its splash pool surrounded by small beaches of pure sand. Wet rock-faces, at the base of the waterfall, were covered with *Todea barbara*, *Leptopteris fraseri*, *Blechnum wattsii* and *B. cartilagineum*. Mossy boulders hosted limited populations of *Hymenophyllum cupressiforme*, *Grammitis stenophylla* and *Pyrrosia rupestris*. Once again it was a delight to see tree ferns, this time represented by *Cyathea australis* in this fairy landscape.

On the way back, we crossed Junction Falls, one on Ridge Creek, another on Lawson Creek, where impressive populations of *Blechnum patersonii* occupied very wet rocks in terraces and *Pyrrosia rupestris* occurred as an epiphyte. A quick stop was made at Adelina Falls, a small waterfall on Lawson Creek, with *Blechnum nudum*, *Leptopteris fraseri*, *Todea barbara* and *Cyathea australis*. Seeping banks of the trail gave us one more opportunity to observe *Blechnum ambiguum* and beautiful plants of *B. gregsonii* mixed with *Gleichenia microphylla* populations.

I would like to thank Peter Hind for his help both in the field and for the details of the localities mentioned in this report.

Monday 20th – Waterfall Loop & Cathedral of Ferns, Mt Wilson; Govett's Leap Falls, Katoomba (Blue Mountains) **Barry White**

The day started with light drizzle and a forecast for a cold showery day. Our 12 members fitted into two 'people movers' to save on petrol. A short stop was made at nearby Blackheath to purchase lunch and we saw our first fern of the day. Trees of various types, including five oaks, lined the footpath alongside our parked cars. On all of the oaks but not on any other tree was a profusion of *Pyrrosia rupestris*, which on one tree covered the trunk and branches from the base to about 30 feet high.

photo: A.H. Ogden

Lunch, Mt Wilson, New South Wales

Klaus Mehltreter, Pat Acock, Jennifer Ide, Ron Wilkins

The first fern stop was at the Waterfall Walk in Mt Wilson. Here we met again with Peter Hind and were also joined by three members of the Fern Study Group of the Australian Plant Society (Steven Lamont, Dorothy Camp and Ron Wilkins). The walk featured two impressive waterfalls and a total of 27 species of ferns was observed. Of special interest was the *Tmesipteris obliqua*, which was a beautiful specimen spread over about three feet of a *Dicksonia antarctica* trunk. Also of interest was a large area of *Microsorum pustulatum*, mostly growing as a ground fern rather than as an

epiphyte, with unusually large fronds looking quite different to ones previously observed.

The second site visited was the nearby Cathedral of Ferns. This was a short walk with a smaller variety of ferns. However, it was well named with a cathedral-like canopy of large *Dicksonia antarctica* and *Cyathea australis* and a lush understorey of *Calochlaena dubia*, *Polystichum proliferum* and *Diplazium australe*. The *P. proliferum* had some unusual forms with divisilobum characteristics.

The final site for the day was Govett's Leap, named after an early surveyor, where the escarpment fell away in a sharp drop and featured a waterfall with a 160 metre drop, and a total fall of 400 metres to the valley floor. The walk down the cliff followed an almost vertical zigzag track along steps painstakingly cut into the cliff-face and sometimes down metal ladders. Water seeping down the cliff dripped onto the path and occasionally increased to a shower. Some sections of the walk were under overhanging rocks, which provided a drier habitat for some ferns. Small specimens of *Schizaea rupestris* were observed in a number of spots, and *Selaginella uliginosa* and *Lycopodiella lateralis* were observed for the first time.

The day finished with some wet and cold weather, the maximum temperature for the day only reaching 9ºC. Peter Hind said farewell to the group and members expressed their deep appreciation to him, firstly for opening his garden to the group and secondly for leading the group's walks over the previous two and a half days. Robert Sykes presented him with two BPS books.

Tuesday 21st – Katoomba to Armidale, New England **Grace Acock**

The group faced a long drive of about 590 kilometres to New England in the north-east of New South Wales and so it was agreed that we should not try to travel in convoy. Low cloud and light rain made the visibility poor, but as we progressed the sky brightened and the temperature rose. Our route took us through a variety of landscapes and through towns such as Lithgow, Mudgee, Gulgong, Coolah, Gunnedah and Tamworth, all just west of the Great Dividing Range. At the start the scenery was reminiscent of mid-Wales, with undulating green hills, rocky outcrops and creeks, mostly dry, running under the road. The area around Mudgee, on the Cudgegong River, is famous for its wines, and at Gulgong, where we had been encouraged to stop for a short break, we saw the shop that was depicted on the first Australian decimal $10 note. This town still has a 'frontier' appearance. Having left Gulgong, the countryside became more open and we travelled across many miles of dry plains. We came to the purported site of the Black Stump, a burnt tree stump marking the point beyond which, in the early days of colonisation, no further settlements could be established. This gave rise to the Australian saying 'Beyond the Black Stump', which in time came to have the same meaning as 'the back of beyond' in Britain. Despite many signs at our lunch spot warning us of kangaroos and wombats, we failed to spot any! However, we did see a few flocks of grey and pink cockatoos (galahs) in flight.

Gradually the countryside became reminiscent of the English Shires and one could understand why this part of Australia is known as New England. We arrived at Armidale at about 6p.m. to gentle rain and were welcomed with refreshments at Lindsay House, our accommodation for the next three nights. We were greeted by Ian Telford, Herbarium Curator at New England University and Glenys Williams, our travel agent, who had made the many reservations for us on our journey through the eastern states.

One car had visited Moonbi Lookout just off the New England Highway to see the extensive view from the top of a large boulder outcrop and found *Pleurosorus subglandulosus*, *Pellaea nana* and three *Cheilanthes* species growing in the grass between the rocks.

Wednesday 22nd – Wollomombi Falls, Oxley Wild Rivers National Park; Eagle's Nest Path, Point Lookout, New England National Park **Rémy Prelli**

We spent this day visiting two national parks east of the town, accompanied by Ian Telford and Glenys Williams. At the first stop, 40 kilometres from Armidale, we visited Wollomombi Falls in Oxley Wild Rivers National Park. This impressive waterfall (possibly the second

highest in Australia – Australia's hesitation!) drops a dramatic 260 metres from an imposing volcanic flow. We explored in the vicinity of the lookout point, but ferns were scarce in the eucalyptus forest. However, we found *Cheilanthes distans*, *C. sieberi* and *Pellaea calidirupium* on small rocky outcrops.

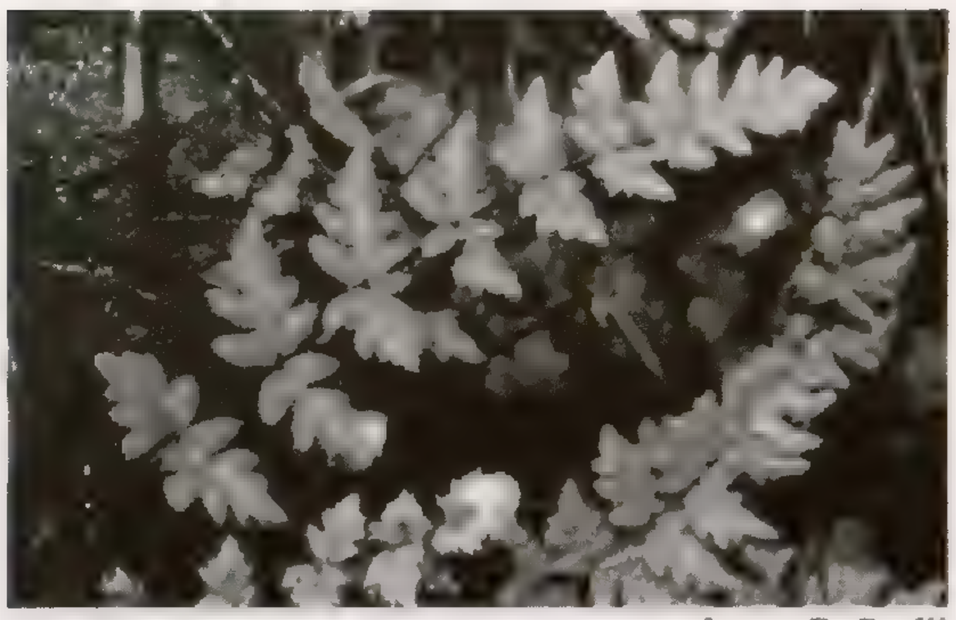


photo: R. Prelli

***Cheilanthes distans*, Wollomombi Falls, New England**

We continued to the New England National Park, south-east of Ebor, where we spent the rest of the day. A brief stop on the road to Point Lookout, circa 1,300 metres above sea level, gave us an opportunity to explore a cool temperate rainforest, characterised by an abundant flora of mosses, both on the trees as well as on the ground including, remarkably, carpets of *Sphagnum*. Suffused in a light mist, it was very aesthetic for photographers. No new ferns, but we came across a few interesting species, such as *Dicksonia antarctica*, *Cyathea australis* (at its highest limit in altitude), *Gleichenia dicarpa*, *Blechnum wattsii* and *B. nudum*, as well as *Pyrrosia rupestris* growing epiphytically on the trees.

It was a cold and wet day. To get warm, we had lunch by a fire in the Point Lookout shelter, where we were joined by Ross Stephens, a Discovery Ranger, who came with us for the afternoon. He explained that the park has been on the world heritage list since the 1980s, and that the high rainfall (which we experienced first-hand for much of the day!) encourages a great variety of lichens, mosses and ferns to grow on wet soils, rocks and tree bark.

New England is a tableland, cut into around its edges by deep, steep-sided gorges. On the tableland itself the vegetation is sclerophytic, mainly eucalyptus scrub, but this gives way sharply at the top of the gorges to temperate rainforest. Deeper within the gorges this is replaced by subtropical rainforest. Following Ross, we took Eagle's Nest Walk, a steep path that starts by the Point Lookout shelter (circa 1,500 metres) and goes down the steep, almost cliff-like side of the gorge. Some *Eucalyptus* species and *Nothofagus* (southern beech) make a discontinuous arborescent cover above an understorey of *Banksia* (*B. integrifolia* in particular) with abundant ferns in the ground cover. The heavy rain that fell nearly all the way was a great impediment in observing and taking pictures, yet it enabled us to understand how it is that such luxuriance can develop and how so many lichens can grow so magnificently. Among the ferns we came across (most of them already seen on previous days) were *Asplenium bulbiferum*, *A. flabellifolium*, *Blechnum patersonii*, *Cyathea australis*, *Dicksonia antarctica*, *Diplazium cf. australe*, *Doodia caudata*, *Histiopteris incisa*, *Huperzia varia*, *Hymenophyllum cupressiforme*, *Hypolepis muelleri*, *Lastreopsis acuminata*, *Microsorum pustulatum*, *Pellaea falcata*, *P. nana*, *Polystichum proliferum*, *Pteridium esculentum*, and *Asplenium trichomanes*, which is much rarer in Australia than in Europe!

As we left the park a group of kangaroos let us furtively observe them, our last reward before arriving back at Lindsay House.

Thursday 23rd – Ebor Falls, Guy Fawkes River National Park; Dorrigo National Park
Alan Ogden

What a contrast to the previous day! The incessant rain had stopped and we enjoyed plenty of sunshine. After breakfast, Glenys Williams, who seemed none the worse for Wednesday's ordeal, again joined us. We set off towards the east on the Waterfall Way, a pleasant, undulating highway that runs from Armidale to the coast through the farmland and woods on the Great Dividing Range that reminded us of home.

Our first stop was at Ebor Falls where a large kangaroo in a nearby field reminded us that we were very far from home. A tarmac path with viewpoints runs along the edge of a huge gorge

into which the Guy Fawkes River, not far from its source, begins its plunge in a series of falls from the tableland at 1,360 metres to the valley below. There were not many ferns in the sclerophyllous scrub: *Pteridium esculentum* and *Cheilanthes sieberi*, one plant possibly of *Doodia caudata*, and *Pyrrosia rupestris* growing on the outcropping rocks. Martin Rickard asked if I had recorded the *Dicksonia antarctica* at the base of the waterfall. Shrouded in spray I could not see it until I fitted my telephoto lens to the camera and there it was, in profusion. I was amazed that it could be identified at such a range. At the Guy Fawkes River gorge lookout, a magnificent view was had of the Ebor Falls as the river leaps in two stages into the valley below.

Our next stop was Dorrigo National Park, a subtropical rainforest, where, in the picnic area we had a welcome coffee kindly provided by Glenys and were soon attended by a couple of bush turkeys scrounging for scraps. Afterwards, our party spread out around the edges of the glade and soon discovered *Pyrrosia confluens* on the trunk of a tree, *Lastreopsis decomposita* growing in the shade and *Rumohra adiantiformis* growing on the trunk of *Cyathea australis*.

A short walk brought us to the Dorrigo Rainforest Centre, which has all facilities and in addition a 'Skywalk', which, as the land falls away, runs out like a jetty into the canopy of the forest trees and ends in a platform with superb views over the surrounding hills and forests. From the Skywalk we could see huge specimens of *Asplenium australasicum* perched on the trees and one example of *Platycerium bifurcatum*. On a short walk into the woods we found a profusion of ferns: *Pyrrosia confluens* and *P. rupestris*, *Dicksonia antarctica*, *Cyathea australis*, *Blechnum patersonii* subsp. *queenslandicum*, *Diplazium australe*, *Pellaea falcata*, *Lastreopsis microsora* and *L. acuminata*, *Asplenium polyodon*, *Histiopteris incisa*, *Cyathea leichhardtiana*, *Arthropteris tenella*, *Hypolepis glandulifera* and *H. muelleri*, and *Microsorum scandens* climbing the trees. The species came so thick and fast it was difficult to absorb all the information! I thought the answer would be to take a lot of pictures and sort it all out later – perhaps not such a good idea.

After lunch we were joined by a Ranger, Greg Claney, who was to act as our guide on a walk through the forest. He explained the forest ecology as we walked under enormously tall trees with huge *Asplenium australasicum* perched at intervals on the trunks and in the canopy. The tangle of lianas and palms would make progress difficult without a path and the unfamiliar bird calls added to the strange mystery of the place. Not many ferns were added to the morning's list: *Arthropteris beckleri*, *Diplazium dilatatum*, *Pteris umbrosa*, *Adiantum formosum*, and a possible *A. diaphanum* was added by Martin Rickard and Patrick Acock who explored further than most of us!

When we got back to our lovely hotel in Armidale, coffee and tea were again waiting for us and even a glass of wine for Martin!

SOUTH-EASTERN QUEENSLAND

Friday 24th – Boonoo Boonoo National Park, NE NSW; Cunningham's Gap, Main Range National Park, SE Queensland

Patrick Acock

We drove 470 kilometres from Armidale to Brisbane. After driving due north for two hours we made a congenial stop at Tenterfield, where we had coffee at a beautiful 1898 house. After purchasing packed lunches we proceeded to Boonoo Boonoo National Park on the NSW side of the state border with Queensland. The dry, open eucalypt forest at first sight looked unpromising, although *Gleichenia dicarpa* and *Pteridium esculentum* were in abundance. However, Barry White called from a little way into the bush and showed us *Schizaea bifida* and it was not long before the rest of the group had found *Cheilanthes sieberi*, *Adiantum aethiopicum* and *Blechnum nudum*. Barry

photo: B. White

***Schizaea bifida*, Boonoo Boonoo National Park**

rounded off the visit with the pretty *Lindsaea linearis*. Despite the dryness, leeches, the *bête noir* of several members of the group, were only too evident!

Another long drive brought us to Cunningham's Gap in the Range National Park, Queensland, where a circular walk, bisected at one point by a path to the Cunningham's Gap viewpoint, took us through an example of a cool subtropical rainforest with a most magnificent forest floor covered in ferns. There were at least five species of *Lastreopsis*, including *L. microsora* and *L. decomposita*, intermingled with *Adiantum formosum*, *Diplazium assimile*, *Pteris tremula* and *Doodia aspera*. Hanging from the banks of the path were such gems as *Pellaea nana*, *Asplenium attenuatum*, *Adiantum atroviride*, *A. diaphanum* and *A. hispidulum*. *Pyrrosia rupestris*, *P. confluens* and *Arthropteris tenella* were growing epiphytically on the lower part of tree trunks, while higher up were magical clumps of *Asplenium australasicum* with the occasional *Platycerium superbum* and *P. bifurcatum*.

Evening was drawing on and so we left the sounds of the juggernauts struggling to reach the top of the gap in their lowest gear and drove on into Brisbane. After settling in at our motel, we found an Italian restaurant close by where we discussed the day's ferns and planned our early assault on the streets of Brisbane the following morning.

Saturday 25th (ANZAC Day) – Rod Pattison's garden; Brisbane Botanical Gardens, Mt Coot-tha, Brisbane **Michel Boudrie**

We left our motel in northern Brisbane early to allow time to navigate the highways and suburban streets of Brisbane with the inevitable 'U' turns, to reach the home and fern garden of Rod Pattison in the southern suburb of Rochedale. There we also met our guide for the next three days, Peter Bostock, a Principal Botanist of the Queensland Herbarium in Brisbane, and leader of the Fern Study Group of the Australian Native Plants Society (Australia) (ANPSA). Several members of the affiliated Queensland society, the Society for Growing Australian Plants, Queensland Region (SGAP) also joined us.

It was amazing to see so many plants, especially fern species, in such a small place! This garden is a concentration of so many native Australian fern species and cultivars (Rod specialises in mutants, variegated and hybrid plants) that one needed to stop every 50 centimetres! Among the more interesting ferns, we should mention *Adiantum hispidulum* var. *whitei* and var. *minus*, *Asplenium attenuatum* with var. *indivisum*, *A. australasicum* (normal bird's nest form and various mutations: crested, tasseled, pinnatifidly divided, and so on), *Coveniella poecilophlebia*, *Crypsinus simplicissimus*, *Cyathea cooperi* 'Double crested', many *Doodia* species, including some putatively intergeneric hybrids with *Blechnum* species, *Drynaria rigidula*, including the natural hybrid *Drynaria* × *dumicola* (*D. rigidula* × *D. sparsisora*) and numerous cultivars ('Whitei', 'Diversipinnae' and others collected and informally named by Rod), *Elaphoglossum queenslandicum*, *Huperzia carinata*, *H. squarrosa*, *Ophioglossum pendulum* (fertile with long pendulous spikes), *Paraceterach muelleri*, *Pellaea paradoxa* (crested form), several *Platycerium* (*P. bifurcatum*, *P. hillii*, *P. superbum*, *P. veitchii*), *Pronephrium asperum*, *Psilotum complanatum*, and the rare and endemic *Revwattsia fragile*.

Rod has also a few exotic ferns in his garden, such as *Adiantum polyphyllum* and *A. latifolium* from the Neotropics, *Aglaomorpha meyeniana* and the hybrid ×*Aglaonaria robertsii* (*Aglaomorpha coronans* × *Drynaria rigidula*) from south-east Asia, *Cyathea dealbata* (the emblem of New Zealand), and *Marattia rolandi-principis* from New Caledonia.

Many thanks are due to Claire and Don Shackel for the pleasant welcome and lunch at their home. Before leaving, we spent some time in their garden looking at ferns, both outside and in greenhouses where interesting species of *Marsilea*, *Adiantum*, *Huperzia* and others could be found. Then we moved on to the Brisbane Botanical Gardens at Mt Coot-tha where we made a relatively short visit as time was short before the gardens closed. This is a very well arranged garden, with different parts devoted to plants from particular areas, such as arid habitats and tropical forests, particular taxa such as bamboos, and even garden styles such

as Japanese, and, of course, a fern house, which immediately attracted our group like a magnet. We were pleased to see representatives of taxa such as *Adiantum trapeziforme* (from the Neotropics and South Pacific), *Angiopteris evecta* (always astonishing for the size of its stipe bases), *Asplenium pellucidum*, *Cyathea woollsiana*, *Dicksonia youngiae*, *Huperzia phlegmarioides*, *Coniogramme fraxinea*, *Marsilea mutica*, *Callipteris prolifera* (*Diplazium proliferum*), *Sadleria cyatheoides* (from Hawaii), and numerous *Adiantum raddianum* and *Pteris cretica* cultivars.

A last stop was made at the Mt Coot-tha Lookout (at 222 metres) where we were surprised by the extraordinary panoramic view over the city of Brisbane and its suburbs in the sunset. Today was Anzac Day, a national holiday in Australia, and the lookout and its restaurants and bars were crowded.

I would like to thank Peter Bostock very much for his help in indicating the details of fern species in the gardens.

Sunday 26th – Twin Falls circuit, Springbrook Plateau **Martin Rickard**

This was a quite leisurely tour of about four kilometres through the mountains south of Brisbane in Springbrook National Park, but with so many ferns to see it took almost all day! We started off walking through flattish woodland with *Cyathea leichhardtiana* and *C. australis* frequent. It was a useful opportunity to compare the two. I had hoped to see *C. cooperi* but had to be satisfied with a small planting by the picnic site. The rarity of this species – internationally the commonest tree fern in cultivation – in its native territory really was extraordinary. Our path soon reached the top of a cliff where we were overshadowed by huge grass trees with ferns growing epiphytically on their trunks including *Dictymia brownii* and a species of *Vittaria*. The path soon dropped over a cliff, passing a *Cyathea australis* with its trunk covered with *Tmesipteris ovata*, before reaching some huge, shaded boulders. Here we saw *Hymenophyllum marginatum* covering several square metres of the rock. I wondered if it was all just one plant. Our interest confused a passing group of Japanese tourists! Other filmy ferns included *Hymenophyllum australe* and *H. cupressiforme*, usually on rocks, and *Cephalomanes* (*Trichomanes*) *caudatum* on *Cyathea* trunks. The path wound its way down the cliff. At the bottom we had to dash behind, or under, a waterfall before making the climb back up to the cars. *Arachniodes aristata* was a pleasant surprise along the side of the path. Other highlight species seen on the walk included *Blechnum cartilagineum*, *B. patersonii*, *Asplenium polyodon*, *A. australasicum*, *Platycerium bifurcatum*, *Davallia solida* var. *pyxidata*, *Pyrrosia confluens* and *P. rupestris*, *Arthropteris tenella*, *Lindsaea microphylla* and *L. linearis*.

Monday 27th – Maiala & Mt Tenison Woods, Brisbane Forest Park, Mt Glorious
Peter Bostock & Pat Acock

We were piloted to Maiala, Mt Glorious, through the western suburbs of Brisbane by Dan and Wendy Johnston, who were staying close by our motel. We met up with Peter Bostock and many of the people who had joined us over the previous days at a barbecue area and set off on a circular walk of some 4.3 kilometres. The wood was much drier than the previous day's and we observed a subset of the ferns seen then, supplemented with *Macrothelypteris torresiana* and *Cyathea cooperi*, the latter only represented by two towering dead plants and two similar living ones! We also found the delightful *Pellaea paradoxa*. In Victoria we had speculated as to whether or not we had seen this plant but when we were shown the real thing it was obvious that we had not. We found it difficult to believe it was a fern until we found a fertile frond. Luxuriating in the higher humidity at the top of the waterfall we saw two large clumps of *Dictymia brownii*, and *Arthropteris tenella*. It was very disappointing underneath the waterfall, as only a few common ferns were found. In the canopy of the trees *Asplenium australasicum* was common but *Platycerium bifurcatum* was only seen in the barbecue and lunch area. On arriving back at the cars Geoff and Merle Goadby served hot drinks and cake.

We had lunch in a roadside cabin restaurant where we were quickly served despite there being over 22 of us. We were kept amused by the birds and not a little intimidated by the kookaburras sitting in the trees with an eye on our sandwiches! Outside the café it was amazing how quickly our species list mounted by us just standing still and looking. *Davallia solida* var. *pyxidata* and *Platycerium bifurcatum* to our surprise were seen growing on conifers, with *Diplazium australe*, *Adiantum silvaticum* and *Christella dentata* under the hedgerows.

Mt Tenison Woods in D'Aguilar Forest Reserve was our destination for the afternoon, where we followed a forestry road some distance to see two cycads, *Lepidozamia peroffskyana* and *Macrozamia lucida*. The woodland was very different to that of the morning. It was surprising to see *Platycerium bifurcatum* colonising quite small trees right down to ground level. The bracken look-alike, *Calochlaena dubia*, was much in evidence but it was the abundant adiantums on the roadside banks that caught our eyes. *Adiantum hispidulum*, an Australian native, was dominant in places but never to the exclusion of other plants, just as it is in Macaronesia and other regions where it is an alien. *A. formosum* was also much in evidence and growing to 30 centimetres or more, but it was the *A. atroviride* that stood out. Peter Bostock had recently separated this plant from *A. aethiopicum* and the differences were quite noticeable at this early stage in the season – the darker colour of the stipe, rachis and lamina in *A. atroviride* distinguishing it from *A. aethiopicum*, which also has narrow, yellowish, entire scales compared to the triangular, ciliate, dark-brown scales of *A. atroviride*.

At the end of our exploration of the wood, we drove to George and Marian Cornwell's garden in the nearby Samford Valley for tea and a proper chance to say our farewells to those who had so kindly and patiently looked after us during our three days in south Queensland.

NORTH QUEENSLAND

Tuesday 28th – Nada & Garry Sankowsky's garden at Tolga, Atherton Tableland

Jennifer Ide

We flew to Cairns on the eastern coast in the far north of Queensland. Having crossed the Tropic of Capricorn, we were now in the tropics proper and the temperature and humidity on arrival were sufficient to convince us. We picked up our four-wheel drives, booked in at the motel and grabbed a light lunch in the restaurant before driving to up to Tolga on the Atherton Tableland (760 metres altitude) to the garden of Nada and Garry Sankowsky.

Despite not long since having had lunch, how could we say no to the cream tea with home-made lillipilli (*Syzygium aqueum*) and davidsonia plum (*Davidsonia pruriens*) jams that Nada had prepared for us. Nada and Garry started this wonderful garden from scratch from native bush land in 1985, expanding it by adding new areas year by year. Gardening is not easy here as Tolga is on the dry side of the Tableland with little rain falling after the wet months of December to March, and at least three very dry months with relative humidities as low as 16% and temperatures rising to 90°C in September to November. Nada specialises in ferns from north-eastern Queensland, especially the endemics for which the region is well known and more widespread species that in Australia only occur in this area. There were so many ferns in this garden that it is possible to mention only a selection of the more interesting ones, concentrating on endemics and natives.

Attached to the side of the house was a large shade-house. Benches and hanging baskets were full of well grown goodies, particularly endemics such as *Teratophyllum brightiae* and *Asplenium simplicifrons*. Non-endemic north-eastern Queensland species were represented by *Sphaerostephanos unitus*, found in sunny swamp areas of the Atherton tableland, the trunk-forming and invasive *Diplazium cordifolium*, *Cyathea rebeccae*, an abundant tree fern in north-eastern Queensland, and *Callipteris prolifera* with its many plantlets along the rachis and, peculiarly, accessory pinnae occurring at the base of the larger pinnae. Nada taught us a helpful mnemonic to distinguish two native aspleniums, *A. australasicum* and

A. nidus, something that several of us had grappled with earlier in the trip. 'Aussie down-under and nidus on top', meaning that the rachis of *A. australasicum* is strongly keeled on the underside whilst that of *A. nidus* is rounded on the top side and only weakly keeled below. Fine if one can climb trees! But the plant that took my breath away was *A. laserpitiifolium* with its long, pendant and very finely divided fronds. Usually found in lowland, humid rainforests growing on trees, rocks and even epiphytically from other ferns such as platyceriums, this is a truly beautiful *Asplenium* and certainly a splendid subject for hanging baskets. A range of *Pellaea* species was growing outside along the back of the shade-house.

In the palm grove, the north-eastern Queensland endemic *Platycerium hillii* was growing on the palm trunks. The lithophyllic *Drynaria quercifolia*, with its distinctive oakleaf-shaped, brown, papery, sterile fronds, which collect debris and protect the rhizomes from the sun in hot weather, was growing in a small rock bed devoted to plants from the dry areas of north Queensland. Growing in a Japanese-style shade-house complete with moss paths were ferns that are normally found in moist, sheltered places, often in rainforests, such as *Chingia australis* (endemic to north-eastern Queensland), *Pneumatopteris costata*, and *Tectaria siifolia*, which is restricted in Australia to a few monsoonal rainforest areas. Throughout the garden, apart from in the main shade-house, flowering plants were intermixed with the ferns to make attractive displays.

Wednesday 29th – Mt Edith, Tinaroo Range & Mt Baldy, Atherton Tableland

Patrick Acock

The previous day we had the opportunity to 'get our eye in' for the ferns of north Queensland. Now came the test. We met Nada and Garry, and also Robin Smith, a solicitor from Cairns who was a most informative and congenial host, at the junction of Tinaroo Creek Road and Cobra Road on the Atherton Tableland. On our way we stopped to take pictures of the many termite mounds and further on saw *Drynaria rigidula* amongst the rocks by the wayside. Nada issued two of the cars with walkie-talkies and gave a commentary as we moved along the forest tracks of Mt Edith, a complex notophyllous vine forest.

As we moved north on this trip the number of ferns had risen rapidly due to the increasing average annual ambient temperature and rainfall, and now we were in an area that really challenged us with its number of species. As we moved deeper into the forest, it became more and more lush with many different and new ferns being observed each time we stopped. At the first idyllic creek we stopped to examine *Cyathea rebeccae*, *C. robertsiana* and *C. woollsiana*. Around the creek and on the rocks were *Blechnum patersonii* subsp. *queenslandicum*, *Lastreopsis rufescens*, *Sticherus flabellatus* var. *compactus* and the very beautiful *Grammitis wurunuran* with its dark red-brown hairs.

At our coffee stop *Marattia oreades* was growing along the trackside and further along we saw *Pteridoblechnum neglectum* growing above a rock, with a host of other ferns growing either in the rock crevices or below the rock, including *Cheilanthes sieberi*, *Belvisia mucronata* and *Adiantum silvaticum*. At another spot on the trail we saw many hymenophyllums growing on sloping rocks, while along the side of the track we often saw the splendid *Diplazium queenslandicum* with its very finely dissected, bright green lamina. An uncommon fern growing on the trunks of the trees was *Asplenium simplicifrons* but the highlight was *A. athertonense* growing on a large roadside rock. Here, too, we saw *Colysis ampla* with its clearly anastomosing veins. Too soon, we were out of the damper part of the forest and on our way to Atherton for lunch.

We then made our way to Mt Baldy. Here, to the delight of our tree fern enthusiast, Martin, we were able to add *Cyathea celebica* and *Dicksonia herbertii* to the list. We were also able to compare *Arthropteris palisotii* and *A. beckleri*, and saw *Lindsaea obtusa* and *L. brachypoda* as well as *Davallia solida* var. *pyxidata* and *Blechnum wurunuran*. Growing with the *Lindsaea obtusa* was *Cephalomanes* (*Trichomanes*) *obscurum*.

It is worth commenting that the difference in the vegetation of the two mounts was very noticeable despite both being described as mixed closed-forest and their close proximity to each other.

photo: B. White

***Dicksonia herbertii*, Mt Baldy**

Thursday 30th – Mt Lewis **Barry White**

The weather forecast for the day was for occasional showers and a temperature of 30 degrees Celsius. The group made an early start as we had about 150 kilometres to travel each way. We headed up through the steep climb to Kuranda to rendezvous with Garry and Nada Sankowsky in Mareeba, followed by a brief stop to collect some lunch in the township of Molloy.

After an hour's drive we arrived at the base of our destination, Mt Lewis, part of the Wet Tropics World Heritage Area. It contains some of the best upland rainforest areas and is also home to a number of rare animals including the golden bowerbird and the southern cassowary. Various ferns soon appeared along the roadside but our leader Garry did not stop until we had covered about two kilometres. He explained that branches of the stinging tree, *Dendrocnide moroides*, a member of the Urticaceae family, were overhanging the ferns and presented a serious risk. The hairs of this tree have a high silica content and can penetrate the skin to release a toxin; the resultant severe irritation may last for several months.

A brief wander up and down the track revealed many large *Marattia oreades*, extensive stands of *Sticherus flabellatus* and some unusual ferns such as *Tectaria confluens*, *Selaginella longipinna*, *Cyathea woollsiana* and C. *rebeccae*. The drive up Mt Lewis was 28 kilometres along a rough unmade road with frequent 'whoa-boys' across the track. Whoa-boys resemble extra large speed humps designed to prevent erosion of the road by channelling the water away to the side. They vary in height from about 30 to 50 centimetres, often with a deep dip on the upper side, requiring careful negotiation to avoid bottoming the vehicles!

Nada and Garry called numerous stops on the drive up the mountain and being very familiar with the road they knew the best places to stop. Of particular note were plants of *Angiopteris evecta* with fronds up to five to six metres long. Unusual species noted included *Teratophyllum brightiae*, *Blechnum articulatum*, *Bolbitis taylorii*, *Oenotrichia tripinnata* and *Prosaptia maidenii*. About a third of the way up the track we passed through an area known as the Brooklyn Sanctuary, a privately run conservation area of 60,000 hectares run by the Australian Wildlife Conservancy. It is home to 48 threatened animal species and at least 45 threatened plant species.

photo: A.H. Ogden

Mt Lewis, Queensland

Martin Rickard, Pat Acock, Garry & Nada Sankowsky

A late lunch was had at the Mt Lewis 'Café', a galvanised tin shed at the end of the track! We then walked to a lookout and along the way we observed some *Crypsinus simplicissimus* and also *Elaphoglossum callifolium* and *E. queenslandicum*. At the

lookout a number of orchids were in flower, a *Rhododendron lochiae* had some bright red, out-of-season flowers and there was *Paphia* (*Agapetes*) *meiniana* with bright red tubular flowers.

The return trip down the road was accomplished more rapidly with just an occasional stop for ferns missed on the way up, such as *Lindsaea brachypoda* and *Taenitis pinnata*. A total of 53 species of ferns was recorded for the day, but Garry and Nada's list had an impressive total of 108 species. A final stop at the foot of Mt Lewis was an opportunity for the group to express its deep appreciation to Garry and Nada for their hospitality, their guidance over the past two days and for their freely shared knowledge of the ferns and flowering plants. Robert Sykes formally thanked them and presented them with two BPS books. Garry had produced a DVD on Australian Tropical Plants and was in the process of producing one on ferns. He has a website at www.rainforestmagic.com.au.

The group returned to Cairns by the scenic route along the coast.

Conclusion **Jennifer Ide**

It was a very tired group who dined together on the last evening of the excursion. Everyone agreed that it had been an enjoyable and successful trip due in a large measure to the considerable help with the itinerary that we had received from fern professionals and enthusiasts in Australia, and their willingness to join us at the various stages of the excursion. This made our explorations more interesting and fruitful than they might have been otherwise. To them all, a big thank you indeed. I would particularly like to express a huge thank you to Barry White, my Australian fellow leader, whose help and advice was so valuable, particularly in the early stages of planning, and who was responsible for the basic structure of the itinerary. And we must not forget our travel agent who, besides making such splendid reservations for us, went beyond her call of duty and welcomed us in Armidale and joined us on our two days ferning in New England, suffering some of the most uncomfortable weather we experienced on the trip!

Notes:

Many of the places and features mentioned in this report, such as Dorrigo Rainforest Centre and Ebor Falls, can be clearly viewed on Google Earth. Also many Internet sites feature superb photographs of a number of the places we visited. They can be found by Googling their names. For the sake of consistency, *Flora of Australia* (1998) names have been used. It was not possible to mention in the report all the species recorded at each site. Permission has been given by the relevant bodies in Australia to post species lists for the different areas we visited on the BPS website. They will be found by going via the new *Bulletin* page. A selection of photographs from the excursion will also be posted on the website.

KENT & SUSSEX WEALD – 3-5 July

(Leader: Paul Ripley) **Nick Hards (Saturday) & Julian Reed (Sunday)**

On Friday night eight of us gathered for a meal to introduce ourselves to newer members and to finalise starting times for the morning. Much fern discussion and earlier meeting reminiscences took place and our leader for the weekend appeared from his music concert before we dispersed to our beds.

Next morning eleven members met in the car park at the centre, the Playden Oasts hotel just north of Rye, where Paul explained the day's programme and we were organised into the minimum number of cars. We then drove to the access point for the RSPB Denge Marsh visitor centre (61/074183). After admiring a low flying kestrel, we set off across the shingle. The general vegetation here is fascinating. Probably the dominant plant is wood sage (*Teucrium scorodonia*), seemingly growing happily in full sun on the shingle, as was honeysuckle (*Lonicera periclymenum*). Other plants that caught my eye included centaury (*Centaurium erythraea*), horned poppy (*Glaucium flavum*), Nottingham catchfly (*Silene nutans*) and dodder (*Cuscuta epithymum*).

Eventually most of the party reached our target after slogging across over a mile of shingle. It was well worth it, as we were shown two colonies of *Thelypteris palustris*, one in wet shingle on the edge of a patch of scrub and the other underneath the bushes on a layer of wet peat on the shingle. There are numerous impenetrable thickets on the marsh where the fern might lurk unseen, although Pat Acock and Paul Ripley have carried out thorough searches of the area over many years. Apparently the most accessible site was obliterated when the RSPB built the new visitor centre. Other pteridophytes seen were *Dryopteris carthusiana*, *D. dilatata*, *D. filix-mas*, *Pteridium aquilinum*, *Equisetum arvense*, *E. fluviatile* and *E. palustre*. Some possible plants of *E.* × *litorale* were noted but there was no time to examine these since we were running very late.

photo: A.M. Paul

***Theylpteris palustris* site, Denge Marsh, Kent**

Paul Ripley, Lindsey Holleworth, Nick & Eleanor Hards, Roger Golding

photo: A.M. Paul

***Asplenium septentrionale* site, Kent**

Pat Acock, Roger Golding, Phil Nokes, Paul Ripley

Our next stop was the remarkable *Asplenium septentrionale* site near Brenzett 61/008271), where it was first recorded over 30 years ago. Unfortunately all the plants looked very dead, though viewed with a hand lens some were still green at the centre. But it has seemed to die out here in the past only to reappear a few years later. Our visit was at the end of a long hot dry spell and the fern may therefore come back again. *A. adiantum-nigrum* was observed on the walls of the former station building at Appledore Station, where our leader had arranged lunch for us at the Railway Hotel.

At Sissinghurst Castle Garden we were joined by Jack and Joan Hubert. Numerous British (e.g. *Gymnocarpium dryopteris*, *Phegopteris connectilis*, *Osmunda regalis*) and exotic (e.g. *Blechnum penna-marina*, *Onoclea sensibilis*, *Polystichum polyblepharum P. acrostichoides*) species and cultivars (e.g. *Polystichum setiferum* 'Pulcherrimum Bevis', *Polypodium vulgare* 'Grandiceps') are grown in these extensive gardens.

We eventually moved on to a most unpromising looking verge beside the A259 between Rye and Hastings (51/850148) where Steve Munyard showed us, tucked away among nettles and brambles, a colony of *Ophioglossum vulgatum* that has been known for over 30 years. As we needed to get ready for dinner I had to skip the final site although we did see *Equisetum telmateia* beside a minor road just outside Rye. Most of the party visited Winchelsea, where they added *Asplenium ceterach*, *A. ruta-muraria*, *A. trichomanes* subsp. *quadrivalens* and *Polypodium cambricum* to the list of species seen.

On Sunday we parked in a lay-by just downhill from the entrance to Nap Wood (51/583330) and within 100 metres we had already seen plenty of *Pteridium aquilinum*,

Dryopteris dilatata, *D. filix-mas* and *D. affinis*. The *D. affinis* plants were all of good size but one in particular was extremely robust and was left to be examined later. Nap Wood, owned by the National Trust and managed with the Sussex Wildlife Trust, is good mixed woodland of beech, birch, oak and holly, all on typical Wealden sandstone with swathes of bracken and bluebells. The site gently slopes away from the road and gets steeper nearer the bottom where it gets very wet. It was dominated by bracken and *Dryopteris dilatata* to start with but as we worked our way downhill it became more acid. *Blechnum spicant* started to appear, then *Oreopteris limbosperma*, the lemon-scented fern, was spotted and became more numerous the further we went. Soon we found our first *Dryopteris aemula* and then a bank of *D. dilatata* and *D. aemula* all of different sizes and regenerating well but with no sign of any hybrid. At the bottom was found a magnificent clump of *D. aemula* at least 60 centimetres tall, as well as *Athyrium filix-femina* and some large specimens of *Blechnum spicant*. We worked our way back to the road and had another look at the robust *Dryopteris*, which Alison Paul, Roger Golding and Paul Ripley suspected was *D.* × *complexa* (*D. affinis* × *D. filix-mas*) as both parents were in the area. This was later confirmed by Roger who found under the microscope that 90-95% of the spores were misshapen and some were quite large.

We lunched nearby at Frant, where there was *Asplenium ruta-muraria* on the pub car park wall. We then walked to a site where *Polystichum aculeatum* has been recorded since at least 1845 (information from Steve Munyard) (51/587356). On our way was a hedge full of *Dryopteris filix-mas* and *D. affinis* agg., and a garden wall with plenty of narrow-fronded *Asplenium scolopendrium*, some at least 20-30 centimetres long. Once on the A267 we found several plants of *P. aculeatum*. The rest of the slope was dominated fern-wise by *Dryopteris dilatata*. However, on the way back we saw *D. affinis* and *D. borreri* and some very nice *Polystichum setiferum*.

On the badge of the local school was what looked like a polypody frond. I later asked a colleague of mine, Colin Cross, who was a local about this. The name Frant is from the Anglo Saxon Fernethe meaning a fern-covered heath or open area within the forest of Andredsweald. The name changed over the years to Ferthe, Fernet, Farnt and then Frant.

Our next stop was Eridge Rocks (51/552356), a Victorian beauty spot with outcrops of Tunbridge Wells sandstone (which Paul described as seeming to be hygroscopic) set in a heathland landscape. The dominant fern in the birch below the rocks was *Dryopteris dilatata*. On the base of the rocks were quite a number of young sporophytes of *D. dilatata* and *Athyrium filix-femina*. Paul took us straight to a very damp corner where we found some more *Athyrium* and a superb specimen of *Dryopteris borreri*. Just behind this was what we had come to see: *Hymenophyllum tunbrigense*, the Tunbridge filmy fern, covering the face of this one small outcrop. A lot of other moss-covered rocks nearby were shadier and seemed damp, but there was no filmy fern; one had *Blechnum spicant*.

Then off we went to a local tea room where we enjoyed a cream tea, a very nice finish to a great weekend of good company and great ferns. If you were not there, you missed out!

DRYOPTERIS AFFINIS AGG. WORKSHOP, NORTH CORNWALL – 11-13 September

Ian Bennallick & Matt Stribley

Ten people met for an evening meal at the Falcon Inn, Bude, ready for a weekend's ferning in the valleys of North Cornwall between Bude and Wadebridge. Local botanist Lesley Philpott kindly welcomed BPS and BSBI members, in the absence of the local organisers Matt Stribley and Ian Bennallick. The prize for the furthest distance travelled went to Wim de Winter from the Netherlands!

Saturday – Bishop's Wood, Polbrock (20/0169) & Valency Valley, Boscastle (20/1091)

Almost twenty people met in the Bishop's Wood Forestry Commission car park at Polbrock (20/013695), on the River Camel just south-east of Wadebridge. For mid-September the weather was perfect: sunny, warm and with a gentle breeze, such a contrast from the cool and

wet August. Before launching into *Dryopteris affinis* agg., we had a look at the riverbank where there were extensive colonies of *Cystopteris diaphana*, known here since 2000 on the vertical muddy banks, especially between tree roots. Some of the fronds were covered in a thin layer of silt as a result of recent heavy rains raising the river levels to leave the fronds underwater for several days. This is a place where otter are seen regularly and as we scrambled down the river a dipper and a kingfisher were seen. Another bonus was a small sporophyte plant of *Trichomanes speciosum* in the mouth of an old mine adit, growing with more *C. diaphana*. The *Trichomanes* had been found in 2001, probably arising after a run of warmer winters from the gametophyte that had been recorded in the adit a few years before; more light following thinning of the conifer woodlands on the steep banks above may also have been a factor. Other ferns were abundant on the damp and dripping rocky bank on the lower part of the steep slope next to the river and beside a track, particularly *Dryopteris dilatata*, *Athyrium filix-femina*, *Polystichum setiferum* and *Asplenium scolopendrium*, with *A. trichomanes* subsp. *quadrivalens* scattered in rock crevices.

photo: F.J. Rumsey

Polbrock Bridge, Cornwall – Matt Stribley, Ian Bennallick, Ken Trewren & Wim de Winter

With Ken Trewren ready to explore the banks beside a woodland track and impart his knowledge on the *D. affinis* agg., the group gathered to see what could be found. Several *D. affinis* plants were present, some with huge fronds. Each plant was examined and over the next hour or two Ken explained the differences between the various species and subspecies of the *D. affinis* agg., as recently purported by himself on a disk available from Ken, and by Christopher Fraser-Jenkins – *Fern Gazette* 18(1): 1-26 (2007). Ken also pointed out various forms (morphotypes). We were aided by the photographs and notes that Ken made available. Bishop's Wood is a good place to start as it has almost all the commonly encountered taxa, a hotspot of male fern diversity! The tally was two plants of *Dryopteris cambrensis* subsp. *cambrensis*, two plants of *D. affinis* subsp. *affinis* and one of subsp. *paleaceolobata*, and *D. borreri*, which Ken explained is proving to have many different forms or morphotypes. One distinctive taxon, provisionally given the code name 'forma rhombidentata' was found, as well as other distinctive forms that are likely to be clones of localised distribution. *Dryopteris filix-mas* was scattered, and *D.* × *complexa* nothosubsp. *complexa*, the hybrid between this species and *D. affinis* subsp. *affinis* was also found. A few plants of *D. aemula* were found on the wooded bank.

A short drive up the Atlantic Highway (A39) took us into a very busy Boscastle (20/100912). Luckily everyone managed to park and have their lunch before an afternoon walk up the Valency Valley to Minster Church and back. Boscastle was made famous on 16th August 2004 when a very localised cloudburst (eight inches of rain fell upstream during the afternoon) caused the valley to flood, scouring out the riverbed as well as sweeping away 50 cars from the car park. Even after five years the effects were apparent. Much of the riverbed had the slate bedrock exposed where gravels and tree-lined riverbanks had been. Interestingly, *Equisetum telmateia* – a rare horsetail in Cornwall, being confined to more basic eroding substrates in a handful of places, mostly on the coast – appeared to be more frequent in open areas beside the river than before the flood. On the shaded side of the river on steep wooded banks, several clumps of *Dryopteris aemula* were found (usually with *Blechnum spicant*) with nurseries of small plants in bare areas probably scoured out in 2004. The path along the dry and sunny side of the valley eventually winds through an old hazel coppice where some dried up specimens of the very rare fungus 'hazel gloves',

Hypocreopsis rhododendri, were seen. *D. affinis* subsp. *affinis* was generally abundant throughout the area, as was *D. borreri*, but in the coppice there was also one plant each of *D. borreri* morphotypes *insolens* and *foliosum*, as well as *D.* × *complexa*.

Crossing the river and going up the path towards Minster Church through sessile oak woodland took us high above a small, deep side valley where *Hymenophyllum tunbrigense* had long been known to grow around isolated rock outcrops. This species had not been seen here since 2000, so the local recorder, Ian Bennallick, led most of the group along the steep and slippery woodland sides (with fallen trees and brambles it was quite an assault course!) to see if the colonies could be refound. We found a good patch of *H. tunbrigense* below a rock outcrop on the east side of the stream, and a new colony on a rock outcrop higher up the bank to the west of the stream below a holly tree, where there was also a small plant of *D. aemula*. We walked back to the car park past banks lined with *B. spicant*.

In the evening we met at Lower Penhalt, Poundstock, just south of Bude, the home of a local botanist (Tim Dingle), where under a small marquee the *Dryopteris* specimens collected during the day were checked and discussed. Tim provided a delicious meal cooked by Sandy his wife. After dinner we relaxed in their living room and Fred Rumsey gave a whistle-stop slide-show of *Dryopteris* species from exotic places such as the Azores, explaining the ongoing research into the distribution and origin of the various species. The sky was stunning as we departed – lack of streetlights for miles around meant that the night sky was very starry, much to the delight of some of the city-dwellers.

Sunday – Stowe Wood (30/2111) & Hollygrove Wood (30/2112)

The group met at Duckpool (30/201116), beside the Atlantic Ocean north of Bude, again in warm, sunny weather. The roar of the waves reminded us that this was truly an oceanic climate. We walked up the road to King William's Bridge, passing on the way a small copse full of large-fronded *Asplenium scolopendrium* and stopping to see a few clumps of *A. ruta-muraria* on the stone bridge (this species is rarely found away from man-made habitats in Cornwall). In a small area of sycamore and ash woodland beside the road (30/210116) were several *D. borreri* plants including occasional morphotype *insolens* and two plants of morphotype *foliosum*, as well as one plant of *D.* × *complexa*. Along the forest track on the south side of the Coombe Valley in Stowe Wood (30/2111) *Dryopteris affinis* subsp. *affinis* was frequent with *Athyrium filix-femina*, *Polystichum setiferum* and *D. dilatata*, and there was a small patch of *D. aemula*. The group crossed the stream and took the path back to the small village of Coombe. There were fewer ferns along the south-facing side of the valley but the late summer sun was most welcome.

A quick picnic was enjoyed at the entrance to Hollygrove Wood (30/2112). Not far from the start of the path, a small hazel coppice with small recently planted (about 15 years before?) trees had some interesting clumps of ferns. Further investigation revealed several *D. affinis* subsp. *affinis* and *D. borreri* plants including occasional *D. borreri* morphotypes *insolens* and *foliosum*, and one plant that at first looked like the hybrid *D.* × *critica*; later examination by Ken proved it to be only a strange *D. borreri* look-alike! There are clearly several forms of *D. borreri* in this area, but, as with other apomicts, where does one draw the line before naming such localised populations as something different? We discussed this problem and decided that a broad approach to naming the various *D. borreri* plants was probably most sensible in areas of high *D. borreri* diversity such as north Cornwall. Further into Hollygrove Wood a very large and typical plant of *D.* × *complexa* was seen. *D. affinis* subsp. *affinis* was generally common throughout, with some splendid specimens of *D. borreri* morphotype *foliosum*, and towards the end of the day one plant of *D. cambrensis* subsp. *cambrensis* was found beside the woodland path. A short walk back to Duckpool in the afternoon sun concluded a very enjoyable weekend.

Many thanks to Ken Trewren for being our *Dryopteris* guide, and to Matt Stribley, Fred Rumsey and Pat Acock for organising the weekend.

CALIFORNIA, USA – 30 September – 12 October

Introduction — Pat Acock

Sue Olsen enlisted the help of Dan Yansura and his wife Patricia Tanttila, natives of California, to plan this joint meeting of the HFF (Hardy Fern Foundation) and the BPS. The trip was enhanced by meeting a wide range of enthusiasts and professionals in a well-balanced mix of gardens and natural sites.

The climate in the places we visited is generally Mediterranean, with a pronounced dry period from May to October. Coastal fogs supplement the moisture in the west. We were told that the average day for the start of the rain was 15th October in San Francisco Botanic Gardens and it started to pour with rain the day we left – 13th October. *The Flora of North America* classifies the vegetation as Type iv 1: 'Dry summer Mediterranean with humid winters', and the soil as 'Soils of mountainous areas'. In many of the wild places that have little rain for five months many of the plants were quite dry and it was fascinating to see how the xeric ferns coped with this water stress and gave the growers real insight into how they should modify their growing practices for such ferns.

During the trip we travelled a total of 2,500 miles. We drove north from San Francisco, hugging the coast on Route 101 to within 50 miles of the Oregon border, and then moved eastwards to travel south between the Coastal Ranges and the Sierra Nevada to Los Angeles, principally on Route 5, then back to San Francisco on Route 101.

30 September – Welcome in Pacifica — Pat Acock

From about 2p.m. people started to arrive from various American states, Canada and the UK and were hosted by Sue, Dan and Patricia in an apartment in the hotel. We were introduced to those new to these tours and met up with old friends from around the world to enjoy a cheese and wine reception. We were given individualised books, prepared by Dan and Patricia, containing our notes, routes, tickets, maps, fern-guides and instructions so that we could come prepared to enjoy each day to the full.

1 October – Dan Yansura's Garden & Strybing Arboretum, San Francisco — Alan Ogden

We gathered at 8a.m. in the lobby of the Best Western Lighthouse Hotel, Pacifica, in various states of temporal disorientation but in good humour and ready for the day's adventures. We made our first acquaintance with the large and comfortable coach and its cheerful driver Danny for the short journey to the home of Dan and Patricia, who had invited us for breakfast, an inviting spread laid out in the garden. In the provided folder was a list of ferns that Dan had prepared for us: 93 different species and varieties in the greenhouse and 103 outside in the garden! It was a wonderful achievement in this very dry part of the country, though a bit overwhelming for us. The garden was on a sloping site with the conservatory tucked in behind the house and the plants outside in terraced beds. There were many other plants apart from ferns and a delightful jungle experience was created with many mature tree ferns. I was impressed by the large banana-coloured slugs, which Dan assured us only ate decaying plant material and the odd *Asplenium*. I particularly liked the *Drynaria* in hanging baskets, the *Lygodium* climbing from floor to roof of the greenhouse and the *Phlebodium pseudoaureum* with huge furry rhizomes. I was also impressed by the *Ophioglossum pendulum*, which looked very happy hanging from its suspended containers.

It was 10.30 when we boarded the bus to go to the Golden Gate Park, travelling along the coastal road where acres of Hottentot fig, *Carpobrotus edulis*, carpeted the land on both sides of the road. San Francisco is built on a peninsula and the large park traverses half of the northern part. We entered the Strybing Arboretum by a path beside a lake bounded by an avenue of huge *Dicksonia antarctica* with a luxuriant growth of *Hypolepis* and *Athyrium filix-femina* beneath. This was maintained by an automatic watering system as was the tree fern dell that was our next stop. Here were more than a hundred tree ferns, mostly *Dicksonia antarctica* but also *Cyathea cooperi* and *D. squarrosa.* A boggy area beneath the trees supported *Gunnera*

and *Woodwardia fimbriata*. Next we came to the Conservatory of Flowers, built in 1878 of California redwood and reminiscent of the Palmhouse at Kew. This beautiful large structure was divided into ecological sections and stuffed with plants including many ferns and orchids.

After lunch Don Mahoney led a tour of the Strybing Arboretum. We were joined by an ex-member of our Society, Philip Hammond, who was known to many of us. Don explained that they are beginning a collection of tree ferns and produce enough *Cyathea medullaris* to supply other gardens, there being no commercial source. He was assisted by a volunteer, Nani Fitzpatrick, who grows many ferns from spores. The garden, like the glasshouse, is divided into ecological zones – cloud forest, primitive plants with a stream and boardwalk and a desert area. Many plants were suffering from the drought but the desert ferns looked very happy. In a redwood grove *Polystichum munitum* (with occasional *Dryopteris expansa*) was growing well beneath them as it does in the wild. It was interesting to see that redwoods, unlike most conifers, can sprout from the roots when felled, forming a circle of new trees.

We ended up at the propagation houses where there was a wonderful range of healthy plants for the arboretum and for sale. There was a section of ferns, mostly grown by Nani who told us she uses several methods, spores, tissue culture plugs and divisions, etc. Several people bought ferns despite the daunting prospect of coping with them for the rest of the tour. Martin formally thanked the staff who had given us an excellent tour and they responded by giving the less mobile of us a ride back to the gate on the electric buggy.

Back on the bus we journeyed back to Pacifica where we had a 'Welcome dinner' at the High Tide Restaurant.

2 October – Tom Ballinger's Garden & Berkeley Botanical Gardens Martin Rickard

Another day looking at local gardens, but what gardens! The first was a very small private garden created by Tom and Jeong Ballinger, neither of whom unfortunately could be there on the day of our visit. In retrospect, I guess the garden might only be 45 by 30 feet but it was literally packed with treasures.

The front garden was fairly hot and dry but the vast majority of the ferns were in the green oasis that is the back garden. Here ferns were planted under various broad-leaved trees and several palms. One or two tree ferns also helped provide a canopy e.g. *Dicksonia antarctica*, *Cyathea cooperi* and *C. tomentosissima* – although we have been told that DNA sequences show that *C. tomentosissima* and *C. cooperi* are the same species! Other untrunked specimens of tree ferns included *Dicksonia blumei* and *Sadleria cyatheoides*. In the more open areas several xeric species flourished, e.g. *Pellaea andromedifolia*, *P. calomelanos*, *P. breweri*, *Cheilanthes lendigera*, *C. eckloniana*, which is one of my favourites, *C. grisea*, *Astrolepis sinuata* and no doubt others I did not note. Other species rarely if ever seen in the UK were *Polypodium squamatum* and *P. bombycinum*, both with silvery scales, *Arachniodes aristata* 'Okoze' – a beautiful dwarf congested form, *Anemia tomentosa*, *Coniogramme gracilis* – with narrower leaf divisions than the more familiar *C. japonica*, and *Blechnum falciforme* with elegant pink young arching fronds. Slightly more familiar were the beautiful hybrid maidenhair *Adiantum* × *tracyi*, *Osmunda banksiifolia* and *Dryopteris formosana*. *Pyrrosia* seems to be a popular genus in the US and here was no exception, with several cultivars of *P. lingua*, including 'Monstrifera' and 'Cristata'.

Apart from ferns and other open ground plants I must mention that there was a large collection of epiphytic orchids, all grown in pots and cultivated in a small shade area. Although this is a very interesting fern collection, it is also a wonderful fern garden. It was a delight to see ferns beautifully grown, well labelled and attractively landscaped in a small but perfect setting.

This garden was always going to be a hard act to follow but Dan and Sue were inspired in making the University of Berkeley Botanical Garden our next stop. With the resources of the university behind it and a large space to plant, it holds one of the best collections of ferns I have seen for some time. We were extremely fortunate to have Alan Smith to guide

us around. Alan recently retired from the university staff although he still works in a voluntary capacity in the herbarium. He was ably assisted by the various staff members responsible for the different garden areas, notably Chris Carmichael, Elaine Sedlack and Peter Clement.

The tour started by admiring the collection of large specimen xerics including *Cheilanthes notholaenoides*, *Pellaea mucronata*, *Notholaena candida*, *Cheilanthes fendleri*, *C. distans* and *C. wootonii*. Nearby we all poured into a small heated fern house where a wide range of well grown non-hardy ferns were on display. I loved the *Cibotium* sp., *Cyathea mexicana*, *C. poeppigii*, *Pronephrium simplex* – it is not often I find anything in the *Thelypteridaceae* attractive, the beautiful silvery fronded *Polypodium rosea*, and *Deparia lancea*. Once more out into the open we explored areas of the garden covering different parts of the world. We started with California and were pleased to make early acquaintance with some natives, notably *Polystichum californicum*, *Polypodium glycyrrhiza*, *P. calirhiza*, *P. californicum*, *Aspidotis densa*, *A. carlotta-halliae* and *Polystichum imbricans*.

Moving on we explored Central America where *Dicksonia sellowiana* attracted my attention; it did look different from *D. antarctica*. We also saw *Pleopeltis guttata* and *Arachniodes denticulata*, which we saw last year in Costa Rica, and untrunked plants of *Blechnum schiedianum*, Central American *Asplenium scolopendrium* – looking exactly like our European form despite the discrepancy in chromosome numbers, and many more species. These gardens have such wonderful fern collections it is impossible to do them justice in the space available here but I will mention a few more interesting plants well established and obviously happy here near San Francisco: *Llavea cordifolia* with its curious dimorphic fronds, *Dryopteris decipiens* with attractive pink young fronds, *Pentarhizidium orientalis* (*Matteuccia orientalis*), *Angiopteris lygodifolia* and *Microlepia platyphylla*, which Judith Jones later assured me was more or less hardy.

Alan Smith arranged to meet us later in the Jepson herbarium. Several interesting specimens were pulled out but we did not have enough time to investigate the collection as fully as we would have liked. Alan gave us an introductory talk and touched on the 'hot' subject of DNA sequences! Apparently some species and genera formerly thought to be distinct or similar have now been reassigned in the overall classification – running completely against morphological evidence! Interesting times! Alan's full article on this was published in 2006 in *Taxon* 55(3). It would be very useful if this article could be made more widely available to pteridologists or perhaps be reprinted in a fern journal.

The day was wound up with a fish supper nearby before rushing back to Pacifica to see the sun set over the Pacific. Needless to say we were running late and missed the sunset completely!

3 October – Mendocino Coast Botanical Gardens **Anon.**

We headed north up the coast, passing through San Francisco and pausing for a photo opportunity under the approach to the Golden Gate Bridge. While the rest of the tourists were clicking the iconic bridge, this busload was focused on *Polypodium californicum* clothing the buttress walls and *Polystichum munitum* footing them.

In need of sustenance, we pulled up to the Rodney Strong winery and sampled the wares, before our first roadside stop halfway to Mendocino. *Adiantum jordanii*, totally shrivelled under nearly leafless California buckeye, *Aesculus californica*, was accompanied by *Pentagramma triangularis*, the goldback fern, which exhibited the same lifeless condition. This bank, likely rainless since May, nonetheless was not entirely brown or grey; *Polypodium calirhiza* looked decent, if not perky, but the star performer was *Dryopteris arguta*, the coastal woodfern, with ripe sori despite all these months of drought.

Our next destination was the Mendocino Coast Botanical Gardens in Fort Bragg. Near the parking lot and offices the gardens were geared towards horticultural education with perennial displays. Towards the sea, areas were dedicated to heathers, camellias and rhododendrons, eventually supplanted by the native flora nearer the ocean. The heather

collection was a horticultural high point but the collection of old rhododendrons had a patchy appearance, partly due to the demise of the mature tree canopy in the last few decades. On the other hand, added light gave the lady fern, *Athyrium filix-femina*, an opportunity and they were large and abundant perhaps also due to frequent fog, and in rather good shape for so late in the season. A fern canyon was full of *Polystichum munitum*. Other ubiquitous ferns were bracken and two horsetails, *Equisetum arvense* and *E. telmateia* subsp. *braunii*, which differs from the European subsp. *telmateia* in that the main stem is greenish. Less common was *Blechnum spicant*, the deer fern; we saw it in many places but it was never abundant – why is it so difficult to grow in eastern North America while its sister from eastern Asia, *B. niponicum*, adapts happily. Conversely, *B. niponicum* was described as distinctly more difficult to establish in the North-west by our tour leader Sue Olsen. *Polypodium scouleri* was seen on bishop pine, *Pinus muricata*, just a short distance from the sea.

Lumber companies sometimes set aside a patch of virgin forest. Such was our last stop of the day, the coast redwood grove in Rockport. Grand coast redwoods, *Sequoia sempervirens*, grew with a lot of lady fern and sword fern above a carpet of *Oxalis oregona*, the redwood sorrel. There was also a tall *Trillium*, perhaps *T. ovatum*, and here again were *Blechnum spicant*, *Equisetum telmateia* and *Pentagramma triangularis*. The bulletin board at the trail's start had a thatched roof occupied by *Polypodium glycyrrhiza*.

4 October – Prairie Creek Redwoods State Park **Graham Ackers**

Travelling north along California's coastal strip, one encounters increasing numbers of the coastal redwood, *Sequoia sempervirens* and their associated parks, created to help preserve and display these iconic and ancient plants. We visited the Prairie Creek Redwoods State Park, a 14,000-acre sanctuary of ancient redwood forest about 45 miles south of the Oregon border. For the day's activities our party divided into two. One group explored some of the short trails near the Visitor Centre, and were also conveyed in smaller groups to Fern Canyon. My group walked the six miles of the James Irvine Trail from the Visitor Centre to Fern Canyon and the coast. Hugging the contours, this gently undulating path passed along spectacular redwood forest scenery. Some of these majestic trees were enormous and pristine but others were damaged, having been felled by batterings from the elements or simply old age, but many were regenerating, optimistic signs for generations to come.

Despite California's long hot summers, these coastal forests are lush under the influence of their maritime summer fogs, and this area was probably the best we visited for seeing a good sample of western forest fern species. Therefore in the list below are included some brief ecology notes.

Adiantum aleuticum. Along the trail this species was restricted to the banks of creeks. However, at the end of the trail we reached the spectacular Fern Canyon, the vertical sides of which were completely covered with dense stands of this fern, stretching for many hundreds of feet. Although the river was low, it was difficult to maintain dry feet whilst negotiating the canyon floor, but the scenic rewards were worth every bit of the effort.

Athyrium filix-femina. Frequent in damper areas and wet flushes; some specimens with fronds up to six feet long.

Blechnum spicant. Occurrence was sporadic along most of the trail, but on approaching the ocean, it became the dominant species, superseding *Polystichum munitum*.

Dryopteris expansa. Occasional occurrence; specimens rather small with delicate fronds in contrast to the more robust plants seen in the Rockport Redwood Grove the previous day. To most of us, this species seemed indistinguishable from Britain's *D. dilatata*!

Equisetum telmateia. Occasional stands in wet flushes.

Lycopodium clavatum. Only one rather poor specimen seen.

Pentagramma triangularis. Observed on the dusty track whilst driving back to the Visitor Centre.

Polypodium glycyrrhiza. Occasional; epiphytic on trees; a large colony observed near the shore at the end of the trail.

Polypodium scouleri. Also occasional on trees, but at higher elevations than the previous species.
Polystichum munitum. The dominant fern of these forests, creating vast understorey carpets. I often wonder how many billion specimens there are in western North America – it seems to be everywhere!
Pteridium aquilinum. A rare plant (thankfully), only occurring in the lighter areas when leaving the forest and approaching the ocean.
Woodwardia fimbriata. One possible sighting on the dusty return track.

An exhilarating day ended with the viewing of a herd of Roosevelt elk in pastures set aside for their grazing and a meal in a Brew pub not far from our Holiday Inn in McKinleyville.

5 October – Humboldt State University, Arcata & East Fork Campground in Six Rivers National Forest **Pat Riehl**

Another beautiful day, sunny and cool. Our first stop was Humboldt State University, north of San Francisco along California's redwood coast. The Bio-Science Building is a complex of greenhouses connected by a common hallway and we scattered to look for ferns among the tropical cacti, orchids, cycads and gingers. The fern collection was wonderful but with the majority being tropical and some unlabelled it was a guessing game; I love these trips because even labelled plants get serious discussion as to the correct names. The collection was the project of Dr Walker, a retired Humboldt University botany professor. A lot of different genera were represented. Plants included the climbing *Selaginella willdenovii*, *Angiopteris evecta* – the mule's foot fern, *Psilotum complanatum*, and a variety of equisetums and tree ferns. There was something for everyone but there were several ferns we all coveted such as *Cionidium moorei*, with green palmate fronds with the sori around the edge of the frond on stalks, giving the whole fern a three-dimensional effect. Another eye catcher was an unknown *Polypodium* with green scale-free rhizomes, pinnatifid fronds and a reddish purple rachis. A huge ball of *Pyrrosia* hung from the ceiling. I wish I could better describe all the different ferns.

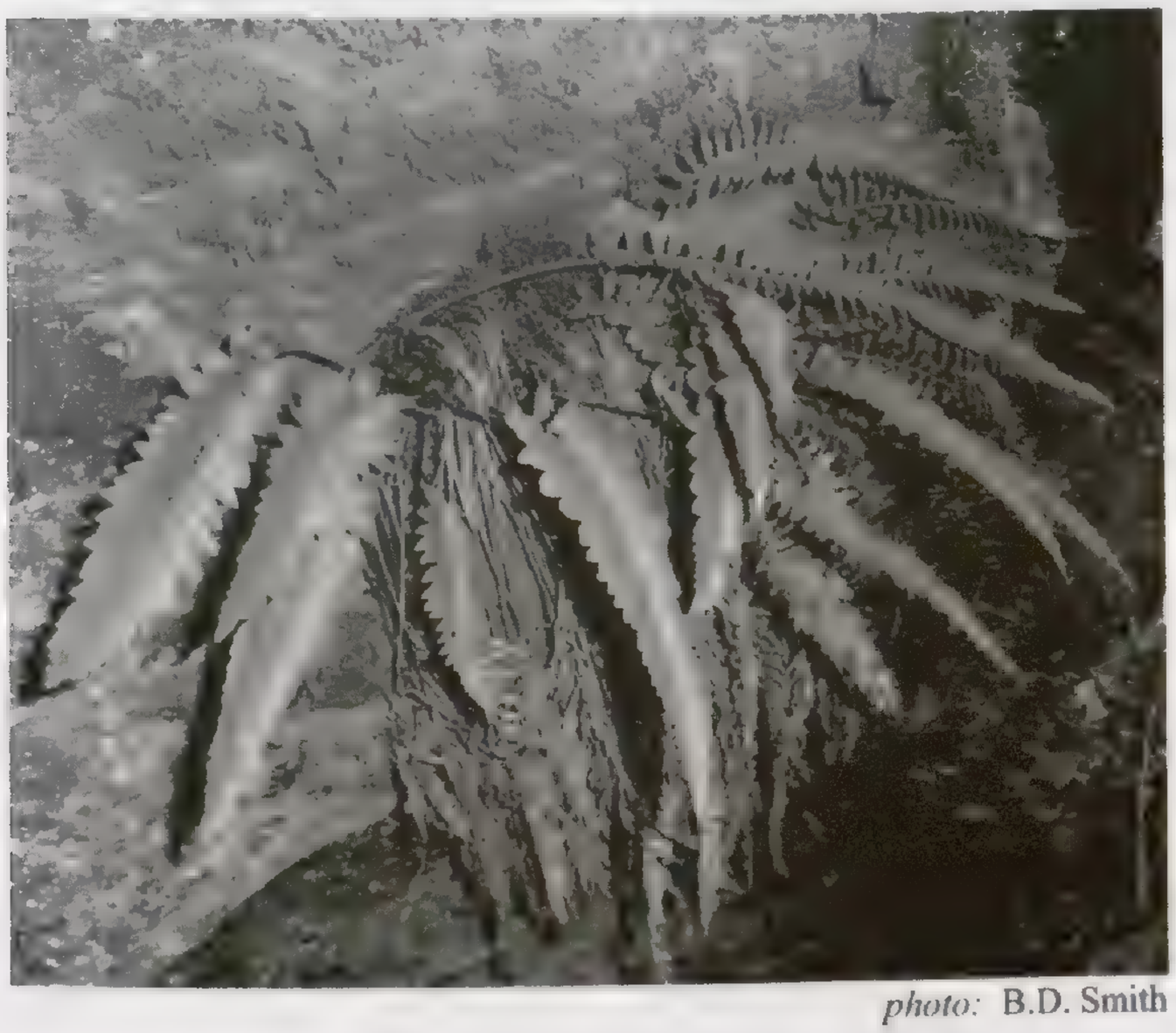


photo: B.D. Smith

Polystichum californicum

After a few hours we headed back to the bus and drove into the mountains, climbing through areas of conifer, dry grasses and big leaf maples that were turning a beautiful yellow. The surroundings were dry, sunny and rocky and we expected to start seeing xerics. We stopped inside Six Rivers National Forest State Park for a 'quick' look at ferns. Just off the road with poison oak we found some *Pentagramma triangularis* in both its green and shrivelled states and an unknown *Selaginella* that was pretty crispy. Someone spotted *Polystichum imbricans* to add to the ubiquitous *P. munitum*. Kent nonchalantly announced he had found *P. californicum* just above the place where everyone had been searching. On the other side of the road was a view of the magnificent mountains we were among and we looked down into a deep canyon filled with evergreen trees and a river.

After another long drive the day ended at Days Inn in Sutter Creek, an area famous for the 1840s gold-rush.

6 October – Yosemite National Park **Paul Ripley**

Leaving Sutter Creek we drove through attractive, deeply folded country, straw-coloured grass dotted with contrastingly dark green trees, gradually climbing into the Sierra Nevada of Western California. Soon we were in pine forests, burnt in places, and stopped to admire the view above the Yosemite valley. Taking advantage of this break we found *Pellaea mucronata*, *P. andromedifolia*, *Pentagramma triangularis* somewhat dried out, *Aspidotis densa*, a UFS (Unidentified Fried Selaginella, possibly *S. hansenii*), *Cheilanthes gracillima* and a second *Cheilanthes* that we thought was *C. covillei* but which was later identified for us by David Schwartz as *C. intertexta*.

The Yosemite Valley is a dramatic valley lined with vertical cliffs carved out by glacial action. El Capitan is one such vertical face, a classic challenge to rock climbers, and the aptly-named Half Dome is its most famous landmark. We made a brief stop to see the Bridal Veil waterfall before lunching at the Visitor Centre. We saw dried-up *Cystopteris fragilis* near the falls and commonly elsewhere.

photo: S. Olsen

Yosemite National Park (El Capitan centre background), California

Standing on wall: Pat Acock, Dan Yansura
Middle row (sitting on wall or standing): Alan Ogden, John Acock, Richie Steffen, Bryan & Gill Smith, Graham Ackers, Jane Whiteley, Paul Ripley, Kent Kratz, Paige Woodward, Pat Kennar, Rose Marie & Jack Schieber, John Scott
Front row (crouching): Martin Rickard, Naud & Wim Burnett, Kathryn Crosby, Sue Olsen, Pat Riehl

The party split up, some taking the tourist bus for a tour of the valley, others, including myself, taking a short trail to the Vernal Falls. Here we found bracken (*Pteridium aquilinum*), *Cystopteris fragilis* – always shrivelled up, *Dryopteris arguta*, *Woodwardia fimbriata*, *Polystichum imbricans* – difficult in this habitat to distinguish morphologically from *P. munitum*, *Adiantum aleuticum*, *Athyrium filix-femina*, *Polypodium californicum*, *Polypodium hesperium*, *Pellaea mucronata*, *Aspidotis densa*, *Cheilanthes intertexta* and to our delight, *Woodsia scopulina*. In spite of the lack of water, the Vernal Falls were dramatic, with rock spray creating a permanent but ever-changing rainbow. Our billet for the night was the Yosemite View Lodge with the Merced River tumbling over rocks below our terrace.

7 October – Kings Canyon & Sequoia National Parks **John Scott**

The time during our long bus ride was occupied by two slide presentations – Ferns of Juan Fernández Island off Chile by Dan Yansura and Ferns of Australia by Martin Rickard. We arrived at the park about noon and proceeded to the two largest trees in the world, the General Grant tree and then the General Sherman tree, both giant sequoias. I had been here twice before so the visit was not as awe-inspiring as it was to first-timers. The general effect of being among these giant redwoods is a feeling of being in a great cathedral. *Sequoiadendron giganteum* are the biggest trees in the world, as opposed to the coast redwoods, *Sequoia sempervirens*, which are the tallest trees. The most exciting moment for many was sighting a black bear. The ferns of the understorey consisted of *Athyrium filix-femina* and *Pteridium aquilinum* var. *pubescens*.

8 October – Kern Canyon **Richie Steffen**

We left the small city of Visalia where we had lodged overnight and headed toward Kern Canyon. Located in the southern part of the Sequoia National Forest, it is the home of several xeric ferns. Just outside the small town of Springville we met David Schwartz, a local fellow fern enthusiast who specialises in dry land species. Entering the mountains we passed shrubby oak forest interspersed with grassland. Our first roadside stop was along rocky and grassy slopes dotted with boulders. Tucked at the base of a particularly large granite boulder were several plants of *Pentagramma pallida*, our first sighting of this small difficult-to-cultivate fern. Similar in size to the much more common *Pentagramma triangularis*, it differs in having a pale creamy white underside to the fronds. As with most of the xeric ferns seen during this trip the fronds were held in tight bundles, nicely exposing the characteristic colouring of the underside of the foliage. There were also scattered plants of *Pellaea andromedifolia* with its characteristic deep reddish purple dry foliage and a few patches of a *Selaginella*, perhaps *S. bigelovii*.

As we continued up the canyon road we made a brief stop to see a lone colony of *Equisetum arvense* growing along the edge of the road surrounded by a forest of oaks and conifers. Travelling along the twisted road the remaining trip passed through the typical dry Californian landscape. Our main stop for the day was at the Johnsondale Bridge, which spans the River Kern. After a quick lunch we prepared for a short hike along the river looking for native xeric delights. Once we crossed the bridge David provided us with a lesson on native ferns. Outcropping boulders were home to the ubiquitous *Pentagramma triangularis* along with three different species of *Cheilanthes*. The most common of these interesting rock dwellers was *C. gracillima*, a charming delicate frame with fine slender fronds. Nearby was our first sighting of *C. covillei*, with characteristic white scales on the undersides of the frond, with the allotetraploid between the two, *C. intertexta* situated nearby. A trail led along the river below, and the rocky parched path provided plenty of habitat for all three species, allowing everyone the chance to try their hand at identification. Further down the trail we were able to see two of the native pellaeas, *Pellaea andromedifolia* and *P. mucronata*.

Gathered back on the bus, we proceeded to our next stop, a small park along the river with a trail that led up a mountainside to a limestone outcrop. A small group decided to scale the mountain to see a choice small fern only found on limestone, *Argyrochosma jonesii*. We set off at a quick pace; the high and thin mountain air left us breathless near the top, but the fantastic views over the valley more than made up for the effort. Once on the ridge we trekked over to the limestone formations. The crumbling sharp layers of stone made excellent homes for a handful of *A. jonesii*, the tightly curled fronds filling the cracks in the rock. *Pellaea andromedifolia* grew in scattered patches nearby, equally defiant of the harsh environment. The remaining group searched along the riverside, finding either *Equisetum variegatum* or *E. laevigatum*, a few leaping lizards and two handsomely striped crawfish that skilfully eluded capture.

As the sun hung low in the sky we reached our final fern stop of the day, a roadside pullout called the Upper Rich Bar Day Use Area. There was little to see in the roadside park, but across the street

were several hundred plants of *Pellaea andromedifolia*. The characteristic deep red-purple crispy fronds dotted a bluff, with a few patches of xeric selaginellas along the top. The dry gravelly soil littered with loose rocks proved hard to scale to any degree, but with a little effort everyone could find ferns for a closer look. As the sun set we boarded the bus and left for our hotel in Bakersfield.

9 October – David Schwartz's Garden, Bakersfield & Huntington, San Marino

Bryan & Gill Smith

Today began with a real treat – David Schwartz's garden in Bakersfield. After seeing many desiccated ferns the day before, it was a pleasure to see David's rock and scree front garden resplendent with green xerophytes of all shapes and sizes. All the more amazing was that, despite fronting the road, the garden remained unvandalised and no-one had pinched his plants. Indeed, David actively encourages youngsters to appreciate his garden provided they stick to the paths. It is impossible to detail all his ferns – we were given a list of over 160 species, so suffice it to say they included an abundance of cheilanthes, pellaeas, pityrogrammas, mildellas and notholaenas. David's favourite was *Actiniopteris semiflabellata*. Ours included *Bommeria hispida*, a lovely stand of *Lygodium japonicum* growing up the outside of the house and a very pretty, small *Pityrogramma calomelanos* var. *austroamericana*. Around the back of David's house we found more familiar *Dryopteris*, *Polystichum* and *Woodwardia* in normal soil – once we had circumnavigated the inviting outdoor pool. It was also good to see that David liked fern memorabilia – from the ferny welcome sign on the front drive to pictures on the walls, a ferny carpet in the lounge and ferny tea-light holders on the patio. At the end of the visit, Martin Rickard presented David with the BPS Special Publications on *Polystichum* cultivars and Victorian books as a thank-you, commenting that David had aged well – Mr Swartz having produced an early-1800s fern book! We left vowing to try and create a small xerophytic fern area in our own garden.

photo: B.D. Smith

***Bommeria hispida* in David Schwartz' garden**

We continued a further 120 miles on our journey to San Marino to visit the Huntington, a private non-profit collections-based research and educational institution founded by Henry E. Huntington in 1919. This impressive 207-acre estate includes a library containing a Gutenburg Bible and several editions of Darwin's *Origin of Species*, an art gallery with numerous original Joshua Reynolds and Gainsboroughs – and 120 acres of botanic gardens. Unfortunately, due to a mix-up, we did not have a guided tour of the gardens so we all went our separate ways to explore. Pat Acock and a couple of others did, however, later meet the guide and were rewarded with a behind-the-scenes tour of the fern greenhouses. We gather this included seeing several *Lecanopteris*, *Elaphoglossum crinitum*, *E. decoratum*, *Microsorum thailandicum*, *Polypodium pyrrholepis*, *P. bombycinum* and *Pecluma pectinata*. In the gardens, we saw part of

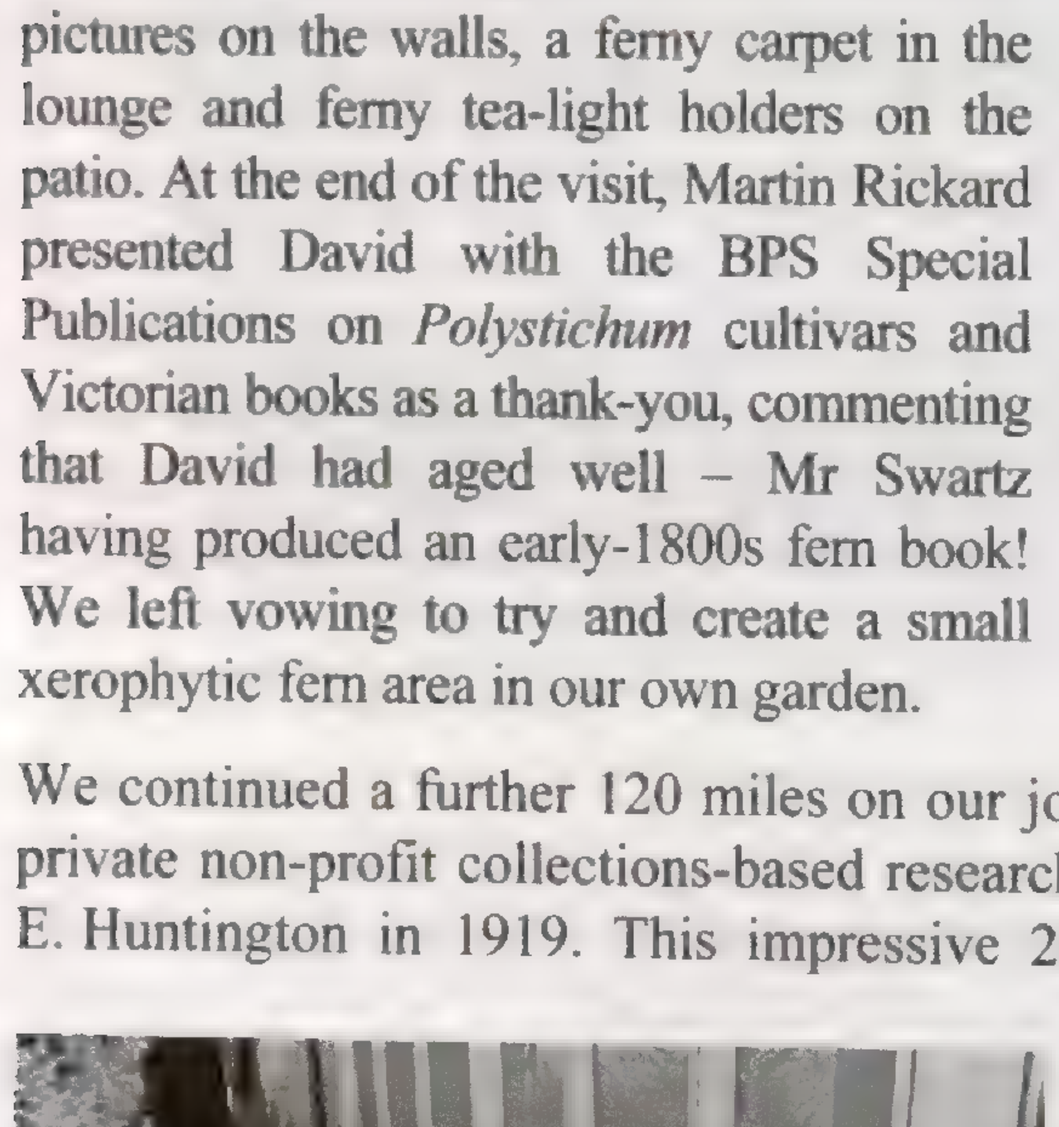


photo: B.D. Smith

***Equisetum hyemale* hedge at the Huntington**

Barbara Joe Hoshizaki's fern collection, which she had donated to the Huntington several years before. Unfortunately, this did not do justice to her ferns as many were mislabelled or yet to become established. However, in the gardens and glasshouses, we did see good stands of *Blechnum appendiculatum*, a nice clipped hedge of *Equisetum hyemale*, a *Lecanopteris* (ant-fern), and an interesting time-line display of pteridophytes in one of the greenhouses. Did you know that dinosaurs became extinct 65 million years ago, between the development of lemmaphyllums 80 million years ago and platyceriums 50 million years ago?

We concluded our day at Motel 6 in nearby Arcadia.

10 October – Los Angeles Arboretum & Lotusland **Sue Olsen**

We breakfasted at Rod's Grill, a diner from 1950s Americana Route 66 days, before heading to the Los Angeles County Arboretum. Denia Mandt, spore exchange director for the AFS, joined us as we were greeted by Jim Henrich who briefed us on the history of the county parks system and specifically the LA Arboretum. Time was short but we enjoyed a display of tropical ferns in the company of orchids in their conservatory as well as the fern collection in their shade-house. The *Blechnum occidentale* with vivid accents of red new growth were especially attractive.

The highlight of the day's botanical/horticultural immersion, however, was Lotusland, a Santa Barbara garden that turned out to be one of the favourites of many participants. It was developed and donated as a non-profit educational institution by Madame Ganna Walska (whose fifth husband (of six!) was the great uncle of Alan Ogden's wife Valerie). She strongly promoted the use of plants en masse. We had been divided into two tour groups, the speedy ones and the lingerers, who turned out to be indistinguishable from one another. Both in turn toured the mass plantings of cycads, cactus, etc. and all went well until we converged in the fern garden. At this point cameras and discussions prevailed and groups dissolved! Small, almost horizontal, plants of *Polystichum munitum* stood modestly shoulder to shoulder under impressive tree fern canopies including *Cibotium schiedei*, a Mexican contribution to the garden. I was especially impressed by a nearby statuesque specimen of *Asplenium australasicum* with its definitive keel marking the midrib of this brilliant green five-footer. Familiar ferns such as *Rumohra adiantiformis*, *Woodwardia radicans* and assorted adiantums joined with the unfamiliar, including *Nephrolepis exaltata* 'Tesselata', *Blechnum moorei*, *Asplenium surrogatum*, *Arthropteris tenella*, *Microlepia strigosa* 'Mcfadden', looking from a distance deceptively like *Athyrium filix-femina* 'Frizelliae', and the healthiest plant I have ever seen of *Asplenium goudeyi*. All were presented in excellent condition and accompanied by begonias and other modestly flowering ornamentals making the garden one of the most attractive and best maintained that we visited.

photo: B.D. Smith

***Asplenium australasicum* & *Platycerium bifurcatum* at Lotusland**

Our motel was just a block back from the beautiful beach, giving us a brief opportunity for a quick walk on the sand before heading to the elegant hillside home – complete with a striking spore-grown *Cyathea medullaris* and a huge hanging *Platycerium* – of Dan's sister and brother-in-law, Sharon and Jim Westby. They graciously hosted us for a splendid evening of delicious food, great wine and relaxed socialising, surrounded by the comfort of a warm fire. It was a most welcome finish to a delightful day.

11 October – La Purisima Mission **Jack Schieber**

This was a quiet day 'in Lake Wobegon' for us as we were mainly travelling. On the way to breakfast, *Dicksonia antarctica*, *Cyathea cooperi* and *Dryopteris arguta* were seen on the street sides. Later in the day we saw bracken near the roadside for a count of four species and nothing new. The road map indicated that for part of the journey north we were on a 'scenic route'. For miles we saw only brown hills with oak-forested tops, which would seem to make a lie of the map. But there is a beauty in any natural landscape. To break the long journey we stopped at La Purisima Mission State Historic Park, where we had a guided tour. This Franciscan Mission was set up in 1787, one of 21 Spanish Missions set up from San Diego to just above San Francisco to encourage immigrants from Spain and Mexico; after working for ten years the settlers were to be given the land as their own. The goal was never reached and the Missions declined. In 1843 La Purisima was sold to private owners and was eventually abandoned to weather and time. After a hundred years it was rebuilt, and for the last 68 years it has been a state park.

Another long drive found us just on time for our reservation at the Fishwife Restaurant close to the ocean and we then retired to the nearby Asilomar Conference Centre close to Monterey.

12 October – Half Moon Bay Nursery **Bryan & Gill Smith**

Not being far from Monterey, we managed a short detour to drive along Cannery Row, of John Steinbeck fame, passing some very expensive sea-front houses, one with *Polystichum munitum* in the garden. Continuing 80 miles north along Highway 1, we turned off on a windy road to Pescadero for lunch, and spotted stands of *P munitum*, *Athyrium filix-femina* and *Pteridium aquilinum* along the roadside.

After lunch, we drove a further 20 miles to Half Moon Bay Nursery, which, among other plants, had a good selection of ferns reasonably common in the US trade. Fortunately, Dan and Patricia had warned the owners of our impending visit, so there was a good selection of ferns. These included various familiar *Adiantum*, *Dryopteris*, *Selaginella*, *Pteris*, *Polystichum* and *Cyrtomium* etc. The more unusual included *Polypodium californicum* 'Sarah Lyman', *Doryopteris pilosa* 'Gemmifera' and *Pteris quadriaurita* 'Flame'. Also, where else could you get a small trunked *Cyathea australis* for under £7? Growing out of the gutter of the fern greenhouse we saw a small plant of *Polypodium glycyrrhiza* and much larger plants of *P. scouleri*, which the owners could have profitably sold in the nursery. Normally California gets no rain from July to November, but the owner warned us of an impending storm the next day, which did duly arrive.

Continuing the 20 miles to Pacifica and passing some *Equisetum telmateia* on the roadside, we stopped off briefly at our hotel before heading back to Dan and Patricia's house for cheese and wine. This gave us another chance to see round the garden but, more importantly, provided a perfect opportunity for Martin and Graham, on the group's behalf, to thank Sue, Dan and Patricia for organising such a tremendous trip, and to give them small tokens of our well-deserved appreciation. We gave Sue a magnificent framed fern print by Niki Simpson, and Dan and Patricia a Highgrove fern plate and two BPS Special Publications. We finished off the evening with a group meal in Pacifica, joined at the last minute by Alec and Linda Greening, Judith Jones and Vanca Lumsden.

Conclusion **Pat Acock**

We learnt so much from the people we met, who were so generous in sharing their time and gardens with us. Many of us are picking up a great deal of expertise and knowledge through the privilege of travelling in the days of cheap air flights. I am ever conscious that the average age of the active members of the Society is becoming higher and it is to be hoped that the skills and knowledge gained on these forays can be handed on to the next generation of pteridologists. We thank Sue Olsen, Dan Yansura and Patricia Tanttila for their meticulous planning and hard work, which resulted in such an interesting tour. It had attracted a diverse and amenable group who enjoyed each others' company and learnt so much about ferns and Californian ecology and culture.

LECTURE MEETINGS AND DAY VISITS

AGM & SPRING MEETING, UNIVERSITY OF MANCHESTER MUSEUM – 4 April

Bryan Smith, & Graham Ackers (book auction)

As well as having an amateur interest in living ferns, I am also interested in fossil ferns, so I was really looking forward to hearing a professional talk about the latter. I was not disappointed. Joan Watson, Honorary Reader in Palaeobotany at Manchester University, led us on an informative, knowledgeable excursion entitled 'Pteridophytes in the English Mesozoic'. Joan told us that there are two major Mesozoic fossil floras in the British Isles occurring in non-marine deposits of the Middle Jurassic and Lower Cretaceous. The former is the Deltaic or Estuarine flora of North Yorkshire, the latter is the Wealden flora in Sussex, Dorset and the Isle of Wight. Both floras are dominated by gymnosperms but are also replete with pteridophytes: horsetails, lycopods and ferns. Many of these are easily attributable to modern families and some are hardly distinguishable from modern genera. The Wealden horsetail *Equisetites lyellii* is a species known in considerable detail and clearly shows characters that indicate that it belongs to a subgenus distinct from the two living subgenera. English Mesozoic ferns, with two notable exceptions, belong to tropical and subtropical families. Easily recognisable are Schizaeaceae, Matoniaceae and Dipteridaceae. Two exceptional ferns, *Tempskya* and *Weichselia*, are attributed to extinct families. Both were of enormous stature, but unlike modern tree ferns, present strong evidence of having been fire resistant and might even have been fire dependent. Joan's talk was rounded off with some lovely artist's interpretations of what the scenery and flora might have looked like in the Mesozoic. Let's hope that these, and articles on fossil ferns, start appearing in the *Pteridologist*.

'The trends of ferns in the Netherlands and the colonisation of a former sea-floor' was the title of the well presented and informative talk by BPS member Piet Bremer of Wageningen University, based on his PhD thesis (gained at the University following a formal lecture presentation to a high-powered audience – the norm for the Netherlands, apparently). His study of fern trends in the Netherlands revealed that ten species had been recorded for the first time since 1980, including *Polystichum lonchitis* and *Marsilea quadrifolia*. Most species showed a positive trend, and this was related to reductions in sulphur dioxide concentrations, ageing of woodlands, creation of new habitats, mild winters and the afforestation of a former sea-floor (formerly the Zuider Zee, nowadays the so-called IJsselmeerpolders).

The discovery of a large group of rare ferns in the Kuinderbos in one of these IJsselmeerpolders in 1977-1979 offered an opportunity to study ecology, colonisation and demography for over 30 years. Most rare ferns grew on drainage trench banks, often on the fine, calcareous sand, where water supply was guaranteed by capillary seepage from the peat. Environmental preferences between species were related to soil, light levels and position within the trenches. For example, *Polystichum setiferum* preferred the lower parts of the fine sand deposits and *Asplenium trichomanes* the steeper trench banks. Within a period of 30 years, some species had changed environmental preference as new habitats became available. At the same time, population size in the group of rare ferns increased from 1,900 to 15,600 plants, with *Asplenium scolopendrium* being most successful. The moment of colonisation proved to be related to the size of neighbouring fern populations. There was a multiple site colonisation with probably the soil sporebank playing an important role. Demographic studies showed light levels to be crucial to *Gymnocarpium dryopteris*. Light levels were also important to *Asplenium scolopendrium*, but matrix transition analysis showed the impact of litter cover (lower reproduction), severe winters (reduction in survival, increase of retrogression) and summer rainfall.

It was fascinating to see that *Polystichum lonchitis* could flourish at sea level, the spores most likely having blown over from the UK. Piet encouraged us to survey drains for ferns, and in question time Matt Busby revealed that he had been doing this for years!

Members were then able to enjoy visits to two other areas of the Museum. In the herbarium, a small selection of the Museum's 27,000 fern herbarium specimens were available to inspect, together with displays about William Crawford Williamson, an eminent Victorian naturalist and palaeobotanist who had been a natural history professor of one of the Manchester colleges. The other area was the room that would become our archive once the 'Manchester Hermit' had completed his tenure there. Back in the lecture room, there were displays of fern fossils to complement Joan Watson's talk, and in the adjacent room members were tempted with sales of BPS merchandise, plants and books.

The Society's AGM was held in the afternoon (see separate item), and the day concluded with a book auction (see below). Many thanks to Yvonne Golding for arranging a very successful meeting at an excellent venue.

The Book Auction **Graham Ackers**

An unusual event at this AGM meeting was the auctioning of some 27 fern books, a small but valuable part of the 237 books acquired by the Society from Nigel Hall. Our booksales organiser Frank Katzer had decided that three sales categories were needed for disposal of Nigel's full collection – direct sale, 'silent' auction, and a 'live' auction of those books where five or more people had expressed an interest. This latter was very professionally run – auctioneer Roland Ennos giving a vibrant and business-like performance, Frank supportively displaying each item, Gill Smith recording the results, and all the participants bidding positively. From my knowledge of the second-hand book market, I would say that virtually every successful bidder had acquired a bargain. Here are some highlights:

- *An Album of Indian Ferns* by C.E. Baynes, 1887. £150. Beautifully produced chromolithographs of parts of fern fronds. Silver-gilt fern cover a little jaded, but contents fine. Rare, archival reprints on the market for about £140, but market value of original (as this) unknown.
- Birkenhead Catalogues. Two, £100 each. The larger (1892) was in original soft beautifully illustrated covers, the smaller (1890) with hard covers. Both in very good condition, with fine wood-engraved illustrations. Market value unknown.
- *European Ferns* by James Britten, 1893-1895. £150. The 30 original parts as issued with decorated paper wrappers. Extremely rare in this state, market value unknown. The bound version of this book is fairly common, and one in very good condition sold in the auction for £45 – still a bargain price. Attractive chromolithograph plates.
- *The Fern Portfolio* by Francis George Heath, 1885. £270. Slightly dull covers as usual, but contents of impressive chromolithograph plates fine. Quite rare, sold for somewhat below market value.
- *The British Ferns* by Sir William Jackson Hooker, 1861. £90. Definitely the bargain of the day! This book was in near fine condition, with hand-coloured lithographs by the great Walter Hood Fitch. It is rare, but when on the market, sells for much more than this. Only a few days before the auction I had seen a copy in antiquarian book dealers Maggs Bros. of Berkeley Square for £500!
- *Ferns: British and Exotic* by E.J. Lowe, 1858-1864, 8 volumes. £200. Original boards slightly worn, contents clean. Not particularly rare on the market, but asking prices are now typically £800 – £1,000, so another splendid bargain!

In the end, the 27 books were sold to 11 people, the total sales coming to £2,026, the reserve being £1,575. All participants are to be congratulated on an enjoyable and successful session that kept even the non-bidding members entertained.

RBG KEW – 6 June

Martin Rickard

After a gap of many years a national meeting was held at the Royal Botanic Gardens Kew. Nigel Rothwell very kindly hosted a group of 40 members for the day. He acted as our guide, arranged free entry into the gardens and a delicious buffet lunch – far more than we could consume! Very many thanks Nigel. Sadly the meeting had to be limited to 40 and I had to turn down a few late applicants although once the limit was reached some local members kindly stood down to make room for others from further afield. You know who you are – thank you! I am very pleased to say that John and Joan Woodhams were in our group. For newer members it might be necessary to say that John, now one of our Honorary Members, was in charge of the ferns, and much more, at Kew for many years. Unfortunately poor health forced his early retirement, but it was great to have his expertise on the day.

photo: B.D. Smith

RBG Kew, June 2009

Back: Clive Brotherton, Roger Golding, Melville Thomson, Jim Dennison, Steve Munyard, Roland Ennos, Gill Smith, Alison Paul, Lesley Williams, Sandy Strang, Tony Braithwaite, Phil Nokes, Jennifer Ide, Graham Ackers, Matt Busby, Jack Hubert, Brian Dockerill, Rob Cooke, Dawn Isaac, Pat Acock, Tim Rayner, Julian Reed, Michael Hayward
Front row standing: Bryan Smith, Alan Dickman, Andrew Tolman, Janet Jephcott, Doreen Brotherton, Eleanor Hards, Christine Mullins, Jane Braithwaite, Joan Woodhams, Sue Dockerill, Grace Acock, Karen Munyard, Nigel Rothwell
In front: Yvonne Golding, Nick Hards, Martin Rickard, John Woodhams

The reserve collection at Kew is not open to the public so it was a special privilege to be able to wander through the glasshouse at will, with Nigel on hand to answer questions. For me the most outstanding group of plants here was the *Marattiaceae* although the drynarias and morphologically similar genera kept most of us nicely confused. After lunch we toured the gardens and went behind the scenes in the alpine section. There were a lot of good things here (dare I mention some stunning *Paris* spp.?!). Favourite ferns growing outside were *Asplenium* × *alternifolium*, *Onychium contiguum* (possibly *O. japonicum*), *Microlepia wilfordii* and many

more. The star was possibly a small colony of *Asplenium marinum* established on the brickwork of one of the raised beds, a new record for London? Moving on, we visited the Temperate House where we admired the magnificent specimens of *Dicksonia antarctica* with an understorey of Australasian ground ferns, most appropriate after our recent BPS Australian trip. Our final stop was in the Princess of Wales Conservatory. Here the many ferns in the tropical and temperate sections are all landscaped to good effect, but there was not enough time to really do this part of the collection justice.

photo: A.M. Paul

***Dicksonia antarctica* from aerial walkway in Temperate House, RBG Kew**

After the organised part of the meeting the group dispersed, some to explore the gardens further while others were able to visit Julian Reed's garden nearby in Twickenham. It was evident from reports I heard that Julian's garden is already very interesting and is sure to be one of our best fern gardens before too long. In the evening 16 of us re-convened for a very convivial evening meal at a restaurant on Kew Green.

FERNS & FOSSILS AT MANCHESTER MUSEUM – 26 September

Alison Evans, Yvonne Golding & Frank McGavigan

Once a month, the University of Manchester Museum has a 'Big Saturday', a family-friendly event with special exhibitions and activities on a particular theme. To devote one of these to ferns was the brain-child of BPS secretary Yvonne Golding who also works as a volunteer at the Museum. The Museum indulged us and supported the idea by providing the link with fossils and organising the children's activities. Our programme for the day, which was supported by a Lottery Grant from OPAL, catered for all ages and all levels of knowledge about ferns, their relatives and their fossil ancestors.

The Museum Entrance

Visitors to the Museum were greeted with a splendid display of large potted ferns, including *Dicksonia fibrosa*, *D. squarrosa*, *Polystichum munitum* and *Todea barbara*, surrounding some reproduction Coalbrookdale fern chairs. This was very eye-catching on what is normally the bare concrete approach to the Museum entrance; many people were observed examining the ferns and trying out the fern chairs. A further display of ferns surrounding model dinosaurs in the Museum entrance hall, underneath the projection of the DVD *Secret Life of Ferns*, again attracted people's attention. Nearby, the BPS stand at the entrance to the Discovery Centre was constantly manned to welcome people to the exhibition, give out quiz sheets, stickers and BPS leaflets. New BPS posters and some large ferns including a fine specimen of bird's nest fern (*Asplenium nidus*) made the stand attractive and interesting. The quiz prizes, a boxed set of fossils for the juniors and James Merryweather's DVD *British Ferns* for the adults, were also displayed on the stand. Many thanks go to John Grue who manned the stand for the best part of the day and also to Ann Gill and Brian and Sue Dockerill.

The Discovery Centre

The feeling on entering the exhibition was like entering an Aladdin's cave of beautiful ferny treasures, on one side illustrating the evolution and life-cycles of ferns and other spore-bearing vascular plants, and on the other a collection to illustrate the many different growth forms and habitats of pteridophytes. The ferns on display were almost all from Yvonne's extensive collection, as were the ferns outside; some of the ferns are permanently housed at The Firs (University of Manchester Botanical Experimental Grounds). Each group of plants was accompanied by an interpretation sheet with explanations and photographs to help people understand what they were seeing. The first display on the 'evolution' side was on ferns, then horsetails, adder's tongues, quillworts, clubmosses and spikemosses, in each case with living plants and their fossil ancestors side by side. Thanks to James Merryweather, Sue Evans and Roger Golding for supplying some material for this exhibit. Diagrams of the fern life-cycle were on poster boards behind the specimens. Thanks to Heather McHaffie for loaning these. We were also fortunate to be able to display some early models of parts of the fern, horsetail and clubmoss life-cycles. The models were made in Germany around 1900 and are in the Museum's permanent collection. The clubmoss section also featured some *Lycopodium* powder floating on water to illustrate its very oily, hydrophobic nature – people were amazed that their fingers didn't get wet when they pushed them into the container. Several people asked about setting fire to the powder, but we weren't allowed to do that, spectacular as it would have been. This section ended with a very popular exhibit of Peruvian stick insects that eat ferns.

photo. E. Evans

Ferns & Fossils at Manchester Museum –
part of the display with fern stick insects, living & fossil ferns

On the other side of the room ferns were organised into ecological groups, each with an interpretation sheet. These included epiphytes where an impressive tree-fern trunk with several platyceriums was displayed, also *Drynaria rigidula* showing its 'bird's nest' of old fronds, and the creeping rhizomes of *Davallia mariesii*. There were common woodland ferns: male fern (*Dryopteris filix-mas*), lady fern (*Athyrium filix-femina*), buckler ferns (*Dryopteris dilatata* and *D. aemula*) and oak and beech ferns (*Gymnocarpium dryopteris* and *Phegopteris connectilis*). For filmy ferns all three of our British native species were displayed together in a fish tank, with a fertile frond of both hymenophyllums, allowing visitors the opportunity to view them closely and distinguish the species from the sori. Examples of ferns that prefer acid or limestone soils were shown: parsley fern (*Cryptogramma crispa*) and hard fern (*Blechnum spicant*) typifying acid moorland and mountain screes, whereas holly fern (*Polystichum lonchitis*), wall rue (*Asplenium ruta-muraria*) and green spleenwort (*A. viride*) characterised mountain screes and limestone pavements. Ferns that live in marsh and fen were illustrated by royal fern (*Osmunda regalis*), fen buckler fern (*Dryopteris cristata*) and marsh fern (*Thelypteris palustris*). Pillwort (*Pilularia globulifera*), floating fern (*Salvinia molesta*) and water clover (*Marsilea drummondii*) donated by Heather McHaffie demonstrated that some ferns live under or on water. The section 'How ferns become trees' featured a trunkless specimen of *Dicksonia*

photo: A.J. Evans

Ferns & Fossils at Manchester Museum –
the Discovery Centre showing some of the living ferns on display

fibrosa and an older specimen with trunk, together with a fine trunked *Blechnum gibbum*, a plant donated to The Firs by Heather McHaffie. Lastly there was a category called 'Weird ferns' in which *Psilotum nudum* was displayed and discussed together with unfern-like ferns such as *Vittaria*, *Pyrrosia* (from Stevie Jakusz) and *Adiantum reniforme* (from Roger Golding). This section was indeed a Cook's tour of the Fern World. Many thanks to Lizzie Evans who helped set up this section. All educational resources were developed by Alison Evans and Yvonne Golding.

Fern propagation, spores, ferny items and more

People were welcomed into a second room with more posters and pictures of ferns. On one side there were propagation demonstrations, with BPS members in attendance to explain how to grow ferns from spores, giving out leaflets and packets of spores and also explaining about other methods of propagation. Thanks to Michael Hayward and Patrick Acock for providing the material for this demonstration and for being on duty for most of the day. On the other side there were microscopes for people to look at spores and other structures featured in the first room. Under one microscope there were *Equisetum arvense* spores, together with instructions describing how to make the spores 'dance' by breathing on them. This caused much amusement. Thanks to Barry and Anne Wright for facilitating this section. We discovered how many ways it is possible for people to 'disable' a microscope, but there was no major harm done and the section was hugely popular, particularly with children.

Close to the microscopes, a lap-top with James Merryweather's *British Ferns* DVD was available (with details of how to order copies). A selection of modern books on ferns were also available for people to browse, and although the books moved around the room as people sat to read them, they were all still there at the end of the day.

A star attraction was a Victorian display case loaned from the Museum with some of the items from Jennifer Ide's impressive collection of fern-decorated ware. The display included items dating from late Victorian times to the present day. Setting-up posed some logistical problems as only one side of the case could be removed, so a young member, Lizzie Evans, came to the rescue by climbing into the case and crawling through with the items. The display of plates, jugs, glasses, ornaments and other ferny items made a lovely centre-piece to this room.

Children's activities

The third room was a hive of activity for children, staffed by Museum helpers to show the children what was available and how to do the various activities. 3-D prehistoric scenes with dinosaurs and pressed fern material, pictures of dinosaurs and ferns to draw and colour, cards made with pressed ferns (adults enjoyed this too!) and fern mobiles were some of the things that the children could make and take away. The mobiles were made with laminated ferns in small panels that could be joined with string and weighted with balsa wood shapes. Demonstration models were hung on a coat rack, as no-one had ladder training to be able to fix them higher up! Many children watched the *Secret Life of Ferns* projected in the entrance hall and enjoyed dinosaur cartoons put on by the Museum at lunch-time.

The quiz

The quiz was based on information in the Discovery Centre, requiring participants to look at the exhibits very carefully. The adult quiz was quite taxing (so BPS members were not allowed to enter!); full marks were only possible by visiting another gallery in the Museum. Consequently only four adults got full marks. The winning entrant pulled out of the hat was Rachel Webster from West Didsbury who won James Merryweather's DVD. The junior quiz was very popular with many attempts but only 32 actually entered the draw. Though there was a complaint that the quiz was too hard, many children gained full marks. The winner was Ricardo, aged nine years, from Manchester who was delighted with his fossil set. He had a brilliant time making lots of ferny items and enjoyed the film shows too.

The talks

Apart from the fern and fossil fun on the ground floor some of us enjoyed the talks given in the Museum's Education Department. Expertly chaired by Roland Ennos, the speakers were light-hearted but informative, with no one breeching Frank's boredom threshold of 20 minutes. The day began with an introduction to the Manchester Museum and the Fern Herbarium by Dr Leander Wolstenholme, the Curator of Botany, who managed to make a potentially dry subject amusing and brought along several herbarium specimens for us to drool over. He was followed by our own Robert Sykes who talked about the founding of the BPS (as the Northern British Pteridological Society) in 1891 and its development and growth since then. His enthusiasm for the sheer beauty of ferns was palpable.

Fred Rumsey, speaking on the 'Private life of ferns', apologised that he would be telling us what we already knew, but I'm sure all the non-botanists like me in the audience learned a lot, for the non-sporophyte stages of the fern life-cycle are little understood by many of us. The fossil aspect of the day was covered by David Gelsthorpe, Curator of Palaeontology, who kindly stepped in at the last minute and used the opportunity to talk about Marie Stopes – yes, that's right, the social reformer and birth control advocate, but also for much of her life a palaeobotanist at the University of Manchester, and indeed the first female lecturer in the north of England. She pioneered the study of coal ball fossils, went to Japan (in pursuit of a man), and narrowly escaped being a member of Scott of the Antarctic's ill-fated trip.

The afternoon session began with Martin Rickard relating his experiences of designing and creating fern stumperies. His slides showed that old stumps, driftwood, or even just logs, can enhance the beauty and appeal of ferns in a garden setting. It is good to raise the wood on mounds for otherwise it gets lost among the greenery, but the placement, he said, is very much a matter of personal taste. He noted that hostas, trilliums, arisaemas and epimediums make good fern companion plants. He was followed by talks on the ferns of two northern counties. Firstly Dr Alan Willmot showed slides on the ferns of Derbyshire, concentrating on the commoner members of the fern flora. It was good to be reminded of the English names, which he used throughout. It was also interesting to learn that green spleenwort reaches its southern limit in Derbyshire. In contrast, Mike Porter pointed out that *Adiantum capillus-veneris* is at its northern limit in Cumbria. Among his pictures were slides of

Asplenium obovatum subsp. *lanceolatum* and *Woodsia ilvensis* as well as that other rarity, a sunny day in Cumbria. With 43 fern species found in the county it is no surprise, as Robert Sykes had pointed out earlier, that the BPS was founded there.

The last two talks of the day were on subjects that are as dear to the hearts of many fern lovers as ferns themselves. Martin Rickard discussed early fern books from Bolton to Lowe via Newman (his own favourite), Heath, and that infamous plagiarist, Moore. He had brought along several examples from his own library for us all to look at. Jennifer Ide's talk was on 'Ferns as decoration in the 19th and 20th centuries'. Given the Victorian fern craze and the 1851 Great Exhibition's emphasis on decoration, it was almost inevitable that later in the century fern motifs would appear everywhere – on pottery, lace, fans, brooches, umbrella stands, cast-iron benches, wallpaper, tombstones and memorials, as well as the famous Mauchline ware and beautiful marquetry on tables and cabinets made in New Zealand. The trend continues with modern examples on scarves, tee-shirts and even bathroom scales.

Overview

We had a constant stream of visitors, many of whom were learning about ferns for the first time. Manchester Museum estimate that around 2,000 people passed through the doors on Ferns and Fossils Big Saturday. Of these around 1,060 took part in activities consisting of 262 under fives, 536 five to sixteen year olds and 262 accompanying adults. In addition, around 25 BPS members attended. The children enjoyed doing the quiz, having the opportunity to use the microscopes, making ferny craft items, seeing the films and watching the stick insects mating! Adults were interested in the range of ferns on display, being able to handle the fossils, learning about how to grow ferns, using the microscopes and admiring the fern-decorated ware. BPS members enjoyed the talks and chatting to old friends and interested members of the public.

The day provided excellent publicity for the BPS, as well as raising awareness of ferns and other pteridophytes. We wanted to provide something for everyone and this was achieved. All in all, a winning formula that deserves to be repeated elsewhere. Many thanks go to all BPS members who helped and to Museum staff Anna Bunney, David Gelsthorpe, Phil Rispin and Leander Wolstenholme. We were delighted to receive a lottery grant from OPAL, which helped enormously with our expenses, notably the printing costs incurred in putting on such an ambitious event.

AUTUMN INDOOR MEETING – *HYMENOPHYLLUM* WORKSHOP, UNIVERSITY OF READING – 31 October

John Edgington

The crowded lecture theatre of the Centre for Plant Diversity and Systematics and the animated discussions that followed the talks were testament to the popularity of 'filmies' and to the varied programme that Paul Ripley had devised. In his welcoming remarks Stephen Jury, Curator of the Herbarium, told us of the Victorian fern enthusiast Mrs Murray-Lyle, and the correspondence between her and Sir Joseph Hooker at Kew, who became a family friend. The Murray-Lyle herbarium is rich in filmies and other tropical ferns, including specimens collected by Wallace in Bali. A good selection was on display during the workshop.

Despite the meeting's title, the family Hymenophyllaceae was its subject. This is an ancient lineage, cosmopolitan, morphologically diverse and taxonomically contentious. In his overview, Fred Rumsey (NHM) pointed out that the family's anatomy – lack of stomata and roots, and leaves only one cell thick – is both distinctive and highly reduced. At the cellular level, an unusual chlorophyll composition (high ratio of chlorophyll *b* to *a*) and relatively few mitochondria allow slow growth even in very low light levels, with good desiccation tolerance. In their ecology filmies resemble bryophytes, another group adapted to a shady, humid environment. Features of the life-cycle, in which gametophytes commonly produce vegetative buds and are capable of indefinite growth, are found in few other ferns, mostly

epiphytes (*Grammitis* and *Vittaria*) but are widespread in bryophytes. The filamentary gametophytes of Killarney fern (*Trichomanes speciosum*) that survive independently of the sporophytes are a well known example.

Next, Sabine Hennequin (Université P. et M. Curie, Paris) reviewed her collaborative work with J.-Y. Dubuisson and A. Ebihara on genetic relationships within the Hymenophyllaceae. Phylogenetic trees constructed by sequencing the *rbcL* chloroplast gene confirm that the family is monophyletic and diverged early, probably in the Permian, from other leptosporangiate ferns. Traditionally about half the 600 or so species were assigned to *Trichomanes* (epiphytic, terrestrial or climbing plants with tubular involucres) and the rest to *Hymenophyllum* (exclusively epiphytic or saxicolous, with bivalved involucres). Cladistic analysis splits the former into eight genera while retaining the single genus *Hymenophyllum* (divided into ten subgenera), with a few transfers between the two groups. We shall have to learn some new names, though it is good to know that they correspond to groups that are not only genetically separated but also, as Sabine showed, morphologically distinctive.

Excellent keys to the genera and subgenera, with lists of representative species, are given in Ebihara *et al.* (A taxonomic revision of Hymenophyllaceae. *Blumea* 51(2): 221-280. 2006). This can be downloaded as a PDF file by anyone interested, so my summary of the new taxonomy will be brief, with a few examples from those Sabine used to illustrate each clade. The trichomanoid genera, with basal chromosome number (x) between 32 and 36, comprise *Cephalomanes* (the basal clade, 4 spp.), *Callistopteris* (5 spp.), *Abrodictyum* (25 spp.), *Trichomanes* (60 spp.), *Polyphlebium* (including *P. venosum* of New Zealand), *Didymoglossum* (>30 spp. including *D. punctatum*, an epiphyte so appressed that it seems to be painted on the tree), *Vandenboschia* (>15 spp. including Killarney fern *V. speciosa*, and *V. gigantea*, seen on the BPS visit to Réunion) and *Crepidomanes* (>30 spp. including *C. bipunctatum*, also from Réunion). The basal subgenera of *Hymenophyllum* are the monospecific *Cardiomanes* (*H. nephrophyllum*, the kidney fern of New Zealand, formerly *Trichomanes reniforme*) and *Diploöphyllum* (the enormous *H. dilatatum*, also from New Zealand), together with *Fuciformia*, *Hymenoglossum*, *Pleuromanes* and *Myrmecostylum*, each with a few species. These all have $x = 36$, as do *Globosa* (25 spp.) and *Sphaerocionium* (70 spp., including *H. capillare*, *H. digitatum* and *H. hygrometricum* from Réunion) while the most recently divergent clades, *Mecodium* (70 spp.) and *Hymenophyllum* itself (100 spp.) have $x = 28$ and x ranging from 11 to 28, respectively. This phylogeny, based on genetic analysis of about 250 species, suggests that terrestrial filmy ferns are ancestral to the epiphytic ones, which appeared with the flowering plants in the Cretaceous and diversified in the Tertiary.

Both *H. tunbrigense* and *H. wilsonii* are in subgenus *Hymenophyllum* (the former is the type species of the genus) and in the next talk Fred Rumsey discussed their status where they meet and (possibly) hybridise in Macaronesia. Both are diploid with $2n = 26$ and 36 respectively ($x = 13$ and 18 in Sabine's notation) and occur in the Azores, Madeira and sparingly in the Canaries: *H. tunbrigense* on Tenerife and Gomera, *H. wilsonii* only on Gomera where it was found in 2003. In 1970 Lovis found a Madeiran fern with intermediate morphology, good spores and $2n = 62$, which must have arisen by chromosome doubling of a hybrid; *H. maderense* has since proved elusive, and is possibly extinct. Fred described recent discoveries along the Levada de Caldeirão Verde, near Queimadas, of three populations that look similar to it. One, on a dead Madeiran laurel, has good spores and is probably *H. maderense*; the others are more cryptic but are likely candidates. A plant with $2n = 49$ collected by Lovis was regarded by Gibby and Lovis (*Fern Gaz.* 13(5): 285-290. 1989) as a backcross between *H. maderense* and *H. wilsonii*. Near Pico de Encumeada, Fred found a similar plant, and in view of the scarcity (or absence) of *H. maderense* he thinks both this and the earlier example more likely to be hybrids between *H. tunbrigense* and an (unreduced) *H. wilsonii*. DNA analysis shows that the maternal parent is always *H. wilsonii*, even in the case of a possible *H. maderense* from Tenerife (where *H. wilsonii* is not present). Fred's photos and enthusiasm brought this complicated story to life.

After lunch, Rob Cooke talked about threats to the three British representatives. Spores of both *Hymenophyllum* species, and possibly *Trichomanes speciosum* too, are found in deposits from the Hoxnian interglacial of 1.5 Ma ago. Whereas *H. wilsonii* is holding its own on more exposed rocks of north-west Scotland and Cornwall, *H. tunbrigense*, like *Dryopteris aemula*, is an extreme Atlantic component of our flora and is declining in south-east England and the Lake District where it is being shaded out by conifer plantations or *Rhododendron ponticum*. Rock-climbing is a threat to its type locality, Eridge Rocks near Tunbridge Wells. The discovery that gametophytes of *T. speciosum* are much more widespread than sporophytes indicates that the genetic diversity of this ancient species (perhaps Cretaceous, according to Sabine) is not at risk. Surprisingly, as Rob showed, if both generations of the life-cycle are included, the hectad maps of *T. speciosum* and *H. tunbrigense* are similar. A recently discovered colony of Killarney fern sporophytes in North Yorkshire is still intact, suggesting that collection is no longer a threat. Of more concern to all three species are grazing, woodland clearance and changes to water systems. Temperature and humidity are the principal factors limiting their success. Most climate models suggest that 2050 will bring fewer frost days and warmer summers (good) but less humidity and drier summers (bad). Conservation action should be limited to habitat management and creation, with re-introduction a last resort.

If the worst happens and plants disappear from the wild, we shall thank the gardeners who preserved them. Not content with tending a fine collection of hardy ferns in his near-vertical garden, Stephen Munyard has also been growing filmies for more than forty years and in the next talk he disclosed a few of his secrets. Having overcome the tribulations of acquiring, growing, losing, finding again and eventually managing to maintain Killarney fern in cultivation, Steve made his subsequent successes sound easy. Constant humidity seems the key. Steve showed us ferns in Wardian cases but aquarium tanks are just as good. For substrates he uses a slightly acidic mix of composted bark and soil, or coconut matting, watering sparingly with soft tap water. Light levels are low, such as on the wall opposite a north-west facing window. Questioned on heating, Steve agreed it wasn't easy to get this right. On the south coast, his plants are in unheated rooms such as an unused bedroom, but he doesn't grow extreme thermophiles. *Trichomanes*, including *T. speciosum*, seem easier to grow than *Hymenophyllum* though he has been successful with *H. falklandicum*, *H. tunbrigense* and *H. wrightii*, among others. Currently Steve has about eight species in cultivation, and his talk led to a lively discussion and a suggestion that the BPS revive the filmy fern Special Interest Group.

The day ended with Martin Rickard's conspectus of filmies worldwide, starting with de Crespigny's directions to an 1838 record of *H. tunbrigense* ("on a rock called Pook Church in Cow Wood, left of the Brighton Road, and half a mile from Handcross"), taking in Killarney fern in Wales (the botanists in the photo being further underwater than the fern), Cornwall (a new site on the River Camel) and Ireland (a bleak rock 1,400 feet above sea level) and continuing with a superbly illustrated tour of Old and New World filmies, many seen on BPS meetings. Highlights from Australia (2009) included *H. australe*, *H. flabellatum*, *H. marginatum*, *H. pallidum*, *H. rarum*, *Abrodictyum caudatum*, *A. elongatum* and *Didymoglossum mindorense* (generic names are those of Ebihara *et al.*). From La Réunion (2006) I've selected *H. hirsutum*, *H. sibthorpioides*, *Abrodictyum meifolium* and *A. tamarisciforme* while amongst the *Trichomanes* from Costa Rica (2008) that Martin showed were *T. crispum*, *T. elegans*, *T. osmundoides* and *T. tuerckheimii*. Photos from South Africa included *H. capense* and *H. marlothii*, from mainland Chile *H. caespitosum*, *H. ferrugineum*, and *Crepidomanes paniculatum*, while a visit to Chile's Juan Fernandez Island yielded *H. cruentum* and *H. pectinatum*. This recital of a few names doesn't do justice to Martin's sparkling commentary or the extraordinary diversity of Hymenophyllaceae, bearing out Fred Rumsey's remarks at the beginning of the day.

REGIONAL MEETINGS

YORKSHIRE FERN GROUP

Hardcastle Crags, near Hebden Bridge, West Yorkshire – 21 February

Brian Byrne

During our field trip here in late September 2008, a number of us looked up at the steeply sloping, north-facing woodland across the river, Hebden Wood, and decided to seek permission to explore this private land. The reason we had chosen to come so early in the year was because our sole objective was to look for *Trichomanes speciosum*! This whole area is rich in the gametophyte of *T. speciosum*, and in February, with the vegetation having died down, we would see more holes in and under rocks to explore. As this part of the Crags is much less frequented and seemed likely to be a bit more favourable for *Trichomanes*, some of us had hopes of being surprised! So on a warm sunny day – for February – eight of us gathered in the visitor car park (34/988292) of the National Trust section of Hardcastle Crags. We were lucky, as a week earlier snow would have forced a postponement, but during the week the weather had turned warmer and as we made our way down to the bridge across the river there was no snow to be seen.

We explored a good sized section of Hebden Wood, mostly on steeply sloping ground, and found ten new locations for the gametophyte of *T. speciosum*. None of these held any surprises, but there is a lot more of this woodland to be explored. For the record, these were the locations: 34/98081 29037; 34/98009 29076; 34/97973 29054; 34/97948 29021; 34/97948 29015; 34/97924 29052; 34/97784 29160; 34/97488 29421; 34/97473 29424; 34/97321 29620.

Moonwort Surveys, Yorkshire Dales – 16, 23, 30 May & 6 June

Barry Wright

This year our loyal band of moonwort (*Botrychium lunaria*) surveyors crossed the barrier from being amateur botanists out for a quiet stroll on a Saturday into proper botanical surveyors. It had long been a source of discussion in the group as to how variable the numbers could be on any given survey occasion. Was this variation caused by differences in observers, or different numbers of plants being visible at different times in the season? And did plants that emerged early in the season get eaten and so were not visible in later surveys?

The master plan for 2009 was to investigate as many possible combinations of survey timing and personnel to determine how reliable the survey technique was at detecting moonworts over a four-week period. In the past, the earliest that we had started was mid-May and the latest, early June. The dates selected were 16, 23, 30 May and 6 June. May 30th was chosen for the main group survey, when four individual surveyors were available. I was able to attend all four sessions and my wife, Anne, joined me on 23 May. This gave a combination of scenarios:

- One person (Barry Wright) surveyed all sections on four occasions at weekly intervals.
- Two persons (Barry and Anne Wright) surveyed all sections on one occasion, each section being surveyed by both surveyors.
- Four persons (Barry Wright, Alison Evans, John Wilson and Bruce Brown) surveyed all sections on one occasion with all sections being surveyed by each of the four surveyors.

The section of road selected was one that had previously shown good numbers of moonworts and is an unclassified road between Grinton and Redmire in the Yorkshire Dales at approximately grid reference 44/040966. This section of road, 1.17 kilometres long, runs more-or-less south-west to north-east. This means that there is a north-west side and a south-east side to survey and each side can be surveyed south-west to north-east or north-east to south-west (it's easier to draw a picture for yourself – honest).

In order to detect any potential observer bias, the four times that I visited the site I started from a different point and walked in a different pattern each time. For example on the first occasion I began in the south-west and walked north-east on the south-east side of the road (refer to your little diagram!) until I got to the turning point and then walked back north-east to south-west on the north-west side of the road. In theory this was a potential way of avoiding becoming familiar with particular sections of road. In practice, by the third and fourth visit I was beginning to expect to find clusters in certain locations regardless of the direction from which I approached. Similarly, when more than one observer was available they each did the sections in different sequences to avoid bias.

The results of this survey were confounding, to say the least! Taking my own observations over the four separate surveys the results are as follows:

Total no. of moonwort spikes recorded on each section in 4 surveys done by Barry Wright

Side of road	16 May	23 May	30 May	6 June
South-east	225	163	128	170
North-west	85	63	84	172
Total	**310**	**226**	**212**	**342**

In general it can be seen that the south-east side of the road tended to have more spikes than the other except on the last occasion when they were almost equal. The situation became distinctly more confusing when the other observers were added in to the equation:

Total no. of moonwort spikes recorded on each occasion by individual observers

Side of road	16 May	23 May		30 May				06 June
	BW	BW	AW	BW	AE	JW	BB	BW
SE	225	163	621	128	78	35	195	170
NW	85	63	87	84	207	149	325	172
Total	**310**	**226**	**708**	**212**	**285**	**184**	**520**	**342**

The numbers recorded on 30 May show significant variation considering that the four observers walked over the same piece of ground during the day yet recorded numbers ranging from 212 to 520. The greatest variation was on the 23 May when I recorded 226 individuals but my wife recorded 708; either I must be going blind or my wife was over enthusiastic! (She did take a long time and seemed to be doing it extremely thoroughly.) Some of the variation is likely to be caused by the natural appearance or disappearance of individual spikes and the precise location data obtained from the GPS devices has yet to be analysed to determine where individuals recorded spikes and where others may have missed them on their passes of the same area.

To attempt to find out if moonwort spikes emerged sequentially over a four-week period and also if they were disappearing into the stomachs of grazing animals (rabbits and sheep) over the period, detailed quadrat monitoring was also undertaken. This involved having a permanently located (using buried metal pipes to facilitate relocation using a metal detector) gridded one-metre quadrat divided into 100 subsquares; the occurrence of individual spikes within the squares was accurately mapped. This survey was repeated and any pattern of the persistence of spikes noted, similarly any new spikes were recorded and any disappearances were noted. In some cases these disappearances were still evident as a 'stump' of moonwort.

The general impression from these data (which await full analysis) is that there is very little recruitment into the populations between the earliest survey date and the latest. It is also possible that there are no actual recruitments, but that different observers become more observant with experience (the plants are a bit small!) A relatively small number of stumps were recorded and a number of disappearances were evident. The advantage of this system is that the same quadrat can be revisited in subsequent years and the process repeated if necessary in order to find out how the colonies move around, or not, within the fixed quadrats.

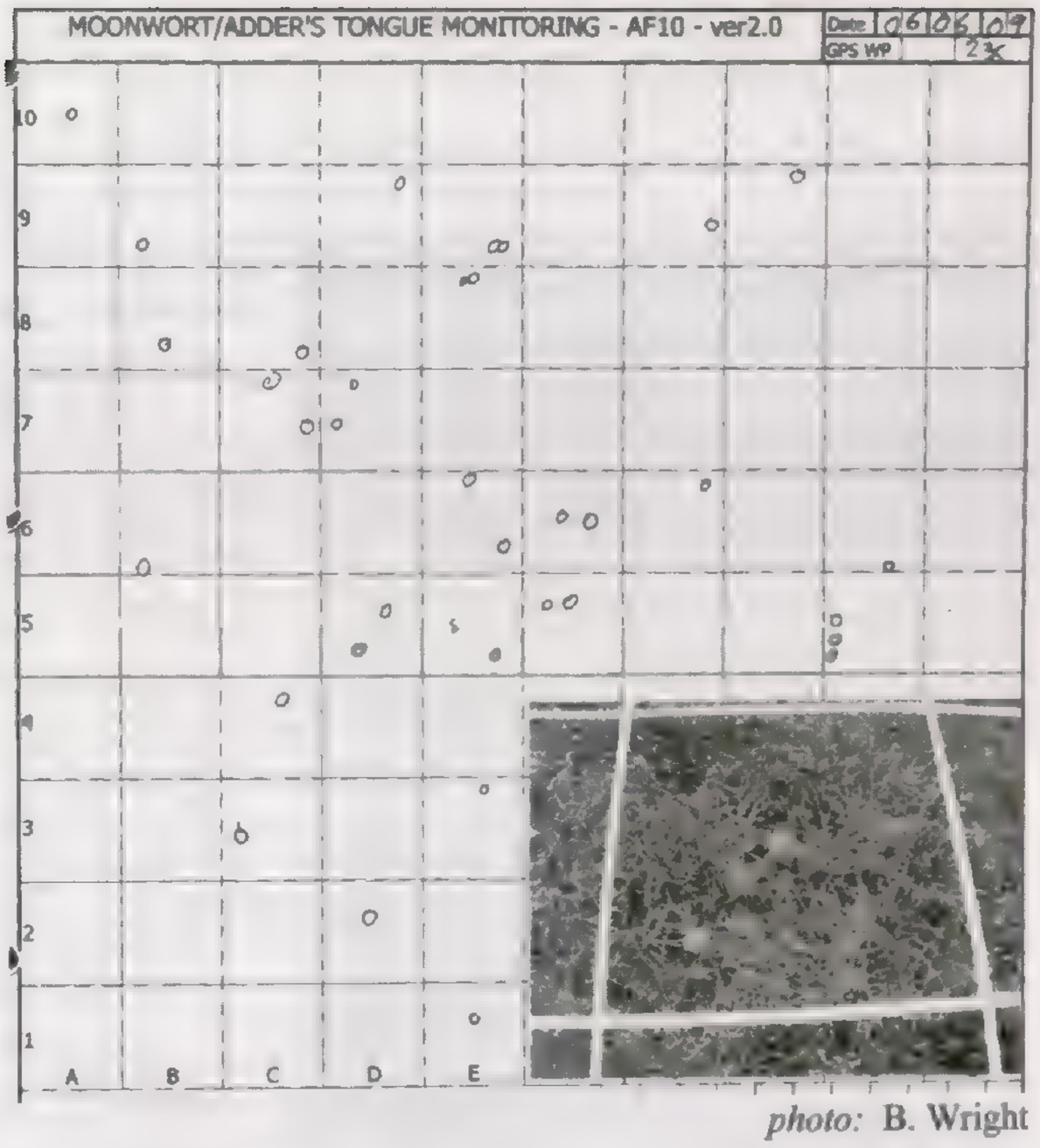


photo: B. Wright

Field record for one-metre square quadrat
Inset: typical moonwort within subsquare of quadrat (sheep droppings c.1cm diameter)

As with many surveys, looking for moonwort generates more questions than answers. I am extremely indebted to my loyal band of surveyors that regularly turn out to satisfy my passionate curiosity for this often overlooked little fern.

Grimwith Reservoir, Yorkshire Dales – 20 June

Bruce Brown

Five of us met at Grimwith Reservoir car park (44/063640), not far from Grassington in Wharfedale. It can really live up to its name when the wind and rain sweep mercilessly across the water, but fortune favoured us with a sunny day on this visit. Superficially it doesn't look promising terrain for ferns, at 300 metres altitude and surrounded by moorland, but the many culverted, wall-enclosed streams running into the reservoir and bouldered embankments make excellent wind breaks and splendid homes for a good number of pteridophytes, and a few surprises were in store for us.

photo: A.J. Evans

Grimwith Reservoir, Yorkshire
Roy Copson, Bruce Brown, Brian Byrne, Denise Copson

We headed anticlockwise along the perimeter track looking into the culverts, most of which contained some plants of *Dryopteris filix-mas*, *D. dilatata*, *Athyrium filix-femina* and *Asplenium scolopendrium*. Our first surprise was on a sloping area running down to the reservoir, which was completely dominated by *Equisetum* (44/067641), at least an acre in extent and so dense it looked like a planted crop! This has been confirmed as *E.* × *litorale* and occasional cones were found that had completely infertile spores when checked under the microscope. Several scaly male-

ferns caused some agonising but amongst them we were confident with some typical examples of *Dryopteris borreri* and *D. affinis*. Close to a nicely restored thatched barn we added *Polypodium interjectum* and *Asplenium trichomanes* subsp. *quadrivalens*.

photo: A.J. Evans

***Botrychium lunaria* at Grimwith Reservoir, Yorkshire**

Just beyond this there was a species-rich, west-facing, grassy banking stretching for about 200 metres on which *Ophioglossum vulgatum* had been recorded in quantity (44/072645), so we agreed to do a count between us. They really were prolific and we totalled 2,900 blades, many with fertile spikes and often quite large in the generally ungrazed turf. A couple of surprises here were a mallard duck that sat tightly on her nest only a yard away from us and a monster *Botrychium lunaria* with a triple branched spike 15 centimetres tall! Further on, two bouldery embankments despite being sandstone rock produced healthy clumps of *Cystopteris fragilis* and *Polystichum aculeatum*. Then we were back to horsetails with *Equisetum palustre*, *E. fluviatile* and *E. arvense* along the ditch sides. In one of the culverts another surprise find was a nicely crested *Dryopteris filix-mas* 'Cristatum Group' (44/066649).

We were halfway round the reservoir by now so decided to complete the circuit. Now on a rough path, we entered open moorland dominated by *Pteridium aquilinum* and crossing a stream found *Blechnum spicant*. *Oreopteris limbosperma* appeared along the sides of Gateup Gill and Blea Gill (44/050656), where another unusual specimen surprised us, a male fern with broad multi-branched frond crests and light pinna cresting, which we took to be *Dryopteris filix-mas* 'Grandiceps'. And right next to it was an undoubted *D. carthusiana*, with a few more clumps in the marshy area beyond. Time was getting on as we crossed the long dam to finish our four mile circuit, and I think we were all rather surprised to have tallied 22 taxa during the day.

Askham Bog & York Cemetery, North Yorkshire – 11 July **Bruce Brown**

Five members met up at Askham Bog reserve (44/575481) on a warm summery day. Refreshment was on hand courtesy of the cherry trees around the car park – juicy red, yellow and black fruit to choose from. This Yorkshire Wildlife Trust reserve is an ancient alder carr woodland and fen and is notable for a lot of rare plant species, so there was plenty to maintain our interest.

But to concentrate this report on the pteridophytes – there were some fine *Osmunda regalis* including some venerable specimens with well over a dozen crowns. *Thelypteris palustris* was widespread amongst the *Juncus* and *Calamagrostis*, many with fertile fronds. There was *Athyrium filix-femina*, occasional *Dryopteris filix-mas* and plentiful *D. dilatata*. *D. carthusiana* was also well represented and it didn't take long to eye up a few hybrid possibilities. As the sori were ripe some pinnae were collected for a microscope check, from which two definite *D.* × *deweveri* were confirmed. Surprisingly no equisetums were spotted. Probably the most memorable moment came on a rustic footbridge over a dyke when I asked Jesse if he could see any *Azolla filiculoides* on the still waters below. "Yes it's on this side" was the reply and as we all craned over the rail, the old planking suddenly gave way beneath our feet, fortunately coming to rest just above the water line!

We then moved on a few miles to York Cemetery (44/610508). This dates back to 1837 when it was privately owned and was the main burial site for York; when closed in the 1960s it was abandoned to nature. Now owned by a charitable trust, much work has been done to restore the buildings and conserve the site, but many areas, particularly the oldest Victorian part are largely left to grow wild and provide wildlife habitats. It is in this fascinating area where the Fernery is to be found. Jack Bouckley had asked us if we could tidy up the Fernery, as many of the planted ferns were being invaded by aggressive angiosperms such as brambles, cleavers, hogweed, grasses, etc., as well as *Equisetum arvense*. We dug out quite a bit and generally weeded the area to bring the ferns back into prominence so it looked like a fernery again. We thank Yvonne Spurr of the York Cemetery Friends Trust for giving us much assistance and providing refreshing drinks.

Looking through our Group records it appears that the fernery was created and planted in about 1997 by James Merryweather, Jack Bouckley and Neil Timm amongst others. It is situated on a bank about 30 yards in length so a lot of plants must have been put in. Eleven years later we were able to count 34 taxa and there were others that we could not name. Many are now mature specimens looking really good and fitting well into this semi-naturalised environment.

Castle Howard, North Yorkshire – 1 August **Bruce Brown**

Five members braved the elements to meet at Castle Howard where we were introduced to Joyce Kingman who was to be our guide round Ray Wood. Our main priority was to provide a record of the ferns, a mixture of native and foreign species and garden cultivars. Joyce works for the Trust dealing with The Kew at Castle Howard Arboretum and is also responsible for the Ray Wood collection; she has identified the many trees and flowering shrubs, particularly rhododendrons, introduced from most corners of the world, including those found by Forrest, Rock, Kingdon-Ward and other famous collectors. The original ancient woodland was clear-felled and replanted in the late 1940s. Collections of exotics were put in in the 1970s and further additions have been made since. What makes Ray Wood very different from a typical arboretum or horticultural area is the apparently random planting policy and complete naturalness of the woodland with all the species being left to fend for themselves. Narrow winding paths thread randomly through the quite densely wooded hillside so it is remarkably easy to get lost, but with something in flower virtually all the year round it is an absolute paradise.

Quite a number of ferns, both foreign species and garden cultivars, were added to the ground flora during the 1970s, but judging from earlier BPS reports in 1984-5, a lot have succumbed to the competitive pressure of trees and shrubs, not to mention the native *Athyrium filix-femina*, *Dryopteris filix-mas* and *D. dilatata*, which grow prolifically in the obviously fertile woodland soil. Fortunately *Pteridium aquilinum* is quite rare, and the only other natives seen were a few *Dryopteris borreri*, plus *Asplenium scolopendrium* flourishing on the walls nearby with an occasional *A. ruta-muraria*.

As we zigzagged our way along the narrow woodland paths the rain really set in, making us very bedraggled, but our interest was maintained by unexpected appearances amongst the shrubbery and conifers of *Dryopteris filix-mas* 'Crispa Cristata', *D. affinis* 'Polydactyla' (possibly *D. borreri* 'Dadds') and various forms of *Polystichum setiferum* including 'Bevis Group' and an admirable 'Divisilobum Mrs Goffey'. A well established colony of huge *Blechnum chilense* came next. Fronds were up to a foot wide and up to five feet tall, but as the stipes were scaly, not hairy, we didn't think they could be *B. magellanicum*. Also really well naturalised were two splendid colonies of *B. penna-marina* introduced from Argentina in 1976. They covered areas of eight by four metres and some of the upright fronds were a foot high. Nearby were a couple of *Polystichum munitum*. There must be good pockets of residual moisture in the ground (well topped up during our visit!) in the lower part of Ray

Wood as we meandered through yards of fine and healthy *Matteuccia struthiopteris*, *Onoclea sensibilis* and *Osmunda regalis*.

It actually cleared up for a while as we visited the lakeside and cascades to find *Equisetum arvense*, *E. fluviatile* (but no hybrid) and another *Osmunda* in a more natural habitat. Finally, a frosted glass manhole cover by the water pump in the courtyard gave a tantalising view of some ferns hidden below – common natives or something more interesting? That will have to remain a mystery. We record our thanks to Joyce and the Castle Howard estate for enabling this fascinating visit.

Ingleborough area, North Yorkshire – 15 August **Bruce Brown**

After last year's failure this was a second attempt to ascend Ingleborough to check out the buckler-fern colonies in the boulder field just below the summit, but again we were thwarted by the elements. On arrival at our Old Hill Inn start point (34/745778) the five of us set off in hopeful mood, but as we ascended the limestone pastures onto the Southerscales pavement a heavy shower began, degenerating into continuous rain with a freshening wind and low cloud. It was even too slippery to go exploring on the pavement so we decided on Plan C – return to the cars for a leisurely lunch.

A brighter period later on tempted us to return to Southerscales, where Alison Evans took some photos of *Gymnocarpium robertianum* and *Dryopteris submontana* for a project. But it wasn't long before the weather closed in again and we dripped our way back to the cars for a second time. The ferns seen on the pavement were as given in last year's *Bulletin* report (p. 38) and the only surprise was a nicely crested *Athyrium filix-femina* 'Cristatum Group' hiding well down in a gryke (34/743766).

Brodsworth Hall, South Yorkshire – 12 September **Paul Ruston**

On a bright and sunny morning we returned to Brodsworth Hall (44/505071), north-west of Doncaster, to continue with the enviable job of naming and labelling the ferns in the collection of the late Eric Baker. We were met by the Head Gardener, Mr Dan Booth, who provided us with a full ground plan of the Dell. This clearly showed the ferns that had been identified by us on our previous visit and showed that there was still much work to do.

photo: A.J. Evans

Bruce Brown & Paul Ruston identifying ferns at Brodsworth Hall, South Yorkshire

The Baker collection comprises an extensive selection of classic and popular cultivars of *Asplenium scolopendrium*, *Dryopteris*, *Polypodium*, *Polystichum*, *Woodwardia* and *Osmunda regalis*. The fronds of *Woodwardia fimbriata* and *O. regalis* presented a contrasting and pleasing picture in the dell and along the steep banks of the Archery. There are four trunked dicksonias in the dell, *D. antarctica* and *D. fibrosa* in equal number. By mid-afternoon the dell was becoming a rather

too warm and sticky place in which to stay – a very rare day indeed, prompting our move to the softer climes of the shaded quarry where nine stoutly trunked tree ferns filled a sheltered corner. This fine collection boasts six *Dicksonia antarctica*, two *D. fibrosa* and a single *Cyathea australis*. The trunk of one *D. antarctica* stood just short of three metres tall. While examining the ferns in the understorey Alison Evans noticed an uncommon epiphytic fern growing on one *D. antarctica*, the sinuous rhizome firmly attached to the trunk. The frond shape of this fern was simple and oblong, with visible branching veins. Later identification by e-mail, courtesy of Michael Hayward, determined it to be a juvenile form of *Microsorum pustulatum*. On this glorious St Leger day, one could say this was definitely a rank outsider that came in at 20:1, with a clear field. A real winner!

25th AGM, RHS Harlow Carr, Harrogate, North Yorkshire – 10 October

Bruce Brown

Our group was founded as the Leeds & District Fern Group in January 1984 when the inaugural meeting at Leeds Polytechnic was attended by nine people interested in forming a local group of the BPS. Meetings during the first year were held at Harlow Carr, Castle Howard, Jack Bouckley's garden and Hackfall Woods. As well as Jack, the group's first leader, we still have as members Barry Wright and Bob Adams from those early years.

We were honoured to have with us Fred Rumsey, who gave us a very interesting and informative presentation on aspleniums, after which we enjoyed a celebratory lunch at the Harrogate Arms next door. In the afternoon we celebrated our 25 years with a collection of slides of past meetings and members, made entertaining by Barry's photos, which focussed on the pteridologists as much as the pteridophytes. Highlights of the Group's activities over the years were put together in a booklet by Barry and presented as a memento to members.

SOUTH-EAST

Hampstead Heath, London – 13 June

Pat Acock

We were 14 in total for this joint meeting with the East Anglia Group. We met our leader for the day, Howard Matthews, in Wildwood Road (51/261879) and Howard gave us a brief history of how Hampstead Heath developed, explaining how such a large wild area just four miles from the centre of London was saved from development. Howard had volunteered to help with survey work a number of years before and as a result knew the history of the Heath and also its flora very well and was able to share his knowledge throughout the day.

We first crossed into Hampstead Heath Extension, where we were able to see *Dryopteris dilatata*, *Matteuccia struthiopteris* and *Osmunda regalis* all doing very well near a chain of artificial ponds. Some of our number heard the alien marsh frogs. Retracing our steps we crossed Wildwood Road and climbed through Sandy Heath, seeing *Dryopteris filix-mas*, *D. borreri*, *Pteridium aquilinum*, *Polystichum setiferum* and *Dryopteris carthusiana* before crossing the busy Spaniards Road. Entering the Vale of Health we first had a glorious view of the city before skirting around the Vale of Health Pond. At its edge we spotted a large colony of *Equisetum arvense* before Howard showed us *Blechnum spicant*, a rare plant in Middlesex and absent from Dougie Kent's *Flora of Middlesex*. Close to the water's edge Roger spotted two sporeling osmundas, quite a rare find here.

Crossing a corner of East Heath we added *Athyrium filix-femina*, *Polypodium interjectum* and *Asplenium scolopendrium*. Time was against us now so we had our lunch within view of a few Victorian follies including a viaduct. Below the viaduct we were able to spot a few handsome *Osmunda regalis* and a few of us had a look for *Ophioglossum vulgatum* but to

no avail. Howard pointed out a large colony of *Equisetum telmateia* before we turned into the tearooms at Kenwood House. Tim Pyner, not being a tea drinker, looked in vain for a patch of *Asplenium ruta-muraria* on the old walls. We travelled on to West Meadow where we found a delightful colony of *Equisetum fluviatile* along with a wonderful collection of *Dryopteris carthusiana* with a couple of prospective *D.* × *deweveri*. In a small enclosed wood next to 'The Hockey Green' some statuesque *D. affinis* caught our eye. We returned to the cars and many small ferns were exchanged, with a few newer members being able to add to their collections.

The remaining hardy few went on to Golders Hill Park (west of the A502) to see a few ferns in cultivation in The Hill Garden. We saw *Cyrtomium fortunei* and *C. falcatum*, neither of which had produced progeny although many sporelings of *Polystichum setiferum* and *Asplenium scolopendrium* surrounded them. There was also a cultivar of *Polystichum setiferum*, *Dryopteris filix-mas* 'Barnesii' and *Blechnum novae-zelandiae*.

We finally made our weary way to the café, where the few that were left thanked Howard and his wife Tina for a most splendid day's ferning, during which we had tracked down 19 of the possible 21 ferns that we had been promised.

South Harting, West Sussex – 19 September **Trevor Lording**

As we gathered at the National Trust car park on South Harting Down (41/790180) we were treated, as promised in the pre-meeting information from Andrew Leonard, our leader, to glorious views of the surrounding countryside. We then had time to make our selection from the ferns that Andrew and other members had generously brought to distribute. We headed north along the South Downs Way, crossing a minor road and saw on a steep wooded slope *Dryopteris filix-mas*, *D. dilatata*, *D. borreri*, *Asplenium scolopendrium* (including some fine crested forms), *Polystichum aculeatum* and *P. setiferum*. We then returned to our cars and drove to Buriton where we had lunch.

We inspected the wall around Buriton Church (41/739200) and saw *Asplenium ruta-muraria*, *A. trichomanes* subsp. *quadrivalens*, *A. adiantum-nigrum*, *A. scolopendrium* and *Polypodium interjectum*. We then skirted around the adjacent pond and headed down a track to a steep-sided bowl, possibly a former quarry, in Appleton Copse. Ferns seen were *Polystichum setiferum*, *Asplenium scolopendrium* in great abundance and fine form (41/737197), *Dryopteris filix-mas*, *D. dilatata* and one large *Dryopteris* that was a good candidate for *D.* × *critica* (*D. borreri* × *D. filix-mas*).

On rejoining the vehicles we headed east towards Coulters Dean to inspect a fine old sunken lane (41/745200) where we saw *Athyrium filix-femina*, *Dryopteris affinis*, *D. dilatata*, *Asplenium scolopendrium*, *Polystichum aculeatum* and *P. setiferum*. A large population of unusual looking polystichums sparked a lively discussion as to their identity; samples of possible candidates for *P.* × *bicknellii* were sent to Fred Rumsey for inspection and comment.

Our final stop of the day involved a drive via Nursted to Sunwood Farm (41/759193) and then a walk up onto West Harting Down, where we were shown in the distance the Isle of Wight. We explored woods containing a bewildering series of *Dryopteris* which, after some friendly banter, the more experienced amongst us determined as *Dryopteris affinis* subsp. *paleaceolobata*, *D. affinis* subsp. *affinis* and *D.* × *complexa* (*D. affinis* × *D. filix-mas*). Less confusing ferns seen were *D. filix-mas*, *D. dilatata*, *D. carthusiana*, *Athyrium filix-femina* and *Pteridium aquilinum*. On returning to the cars, all present thanked Andrew for an excellent day's ferning in a very attractive area in pleasant weather, before the more zealous members of the party followed Andrew to a final and reportedly fine population of *Asplenium scolopendrium*.

Maplehurst Wood, & Steve & Karen Munyard's house, Hastings, East Sussex – 24 October

Roger Golding

On a damp and misty morning about 17 members met on the busy roadside beside the entrance to Maplehurst Wood (51/810127), on the northern outskirts of Hastings. The wood is an SSSI, and we were accompanied on the walk by the site manager, Louise Hutchby from Natural England; part of the reason for the trip was to make a list of ferns growing in the wood. The wood is on clay slopes drained by streams that wind around the lower parts of the valley. In some areas there is enrichment from more basic soils that underly the clay, resulting in a fairly rich and varied fern flora – for the South-East, that is!

Walking along the lane to the entrance we passed *Polypodium interjectum* growing in the hedgerow and found more in the wood itself. We rapidly found many of the commoner ferns, including *Dryopteris filix-mas*, *D. dilatata*, *D. borreri*, *Athyrium filix-femina* and *Polystichum setiferum*. Scattered *Dryopteris affinis* were also present, and as we moved further into the woods we also found *Asplenium scolopendrium*, *Dryopteris carthusiana*, surprisingly small quantities of *Pteridium aquilinum*, and in the more acid areas *Blechnum spicant*. Despite assiduous searching we were unable to find any of the hybrid between *D. dilatata* and *D. carthusiana* (*D.* × *deweveri*), and only one rather ambiguous candidate for *D.* × *complexa*, completely lacking in fertile fronds. Julian Reed found an interesting variety of *Blechnum spicant*, which instead of dimorphic fronds had fronds that were roughly evenly divided into a lower infertile section and upper fertile section.

photo: R. Golding

Maplehurst Wood, Kent

Trevor Lording, Pat Acock, Howard Matthews, Bryan Smith & Julian Reed looking at *Blechnum spicant* variety

Moving up from the valley bottom to the top of the wood again we were given a tour of Mark Border's lovely garden, which backs onto the woods. A wonderful spot, half woodland garden with a rich and varied fern planting, bamboos, greenhouses with cacti and alpines, and much else besides. Eventually, we reluctantly tore ourselves away from these delights, and in gradually worsening weather made our way back to the cars. Despite the best efforts of our leader some of the group got lost on the way back but eventually the final soaked-through members made it back to Steve and Karen's house, one or two clutching fronds of *Equisetum telmateia* found growing on the edge of the wood while stumbling around in the undergrowth.

Steve and Karen had put on a magnificent feast, which was much appreciated and demolished with remarkable intensity. In the afternoon we wandered around their garden, in the breaks from driving rain, admiring their fascinating collection of ferns and other exotic plants. Later, we were treated to a series of presentations on aspects of the ferning year, including presentations on California, La Palma, and a series of images of fern cultivars and varieties from Julian Reed. [Also a typically well organised summary of Roger Golding's study of difficult fern species. *P. Ripley*] All of course interspersed with more refreshments, and we eventually staggered home replete with food and ferns.

EAST ANGLIA

Indoor meeting, Little Thurlow, Suffolk – 31 January — Tim Pyner

Eighteen members and friends gathered for our regular winter meeting at Little Thurlow, where we had the pleasure of a fascinating presentation by Martin Rickard about his trip to Juan Fernandez – a small group of islands in the south-east Pacific off the coast of Chile. He described the visit with his usual humour and wit, from landing on the island's tiny airfield and the worrying boat trip to the hotel, through to the trips out to see some of the fantastic ferns of the islands. The fern flora is related to the South American flora but with a significant proportion of endemic species and varieties that highlighted the isolated location of the islands. Unfortunately many of the natural habitats are threatened, in particular, introduced brambles (*Rubus* species) are a major concern.

Following some splendid refreshments Martin gave a second, equally entertaining, talk on a variety of ferny subjects. I would like to thank Martin for making his time available and for providing such interesting talks. We would also like to thank Mary Hilton for hosting the meeting.

Broaks Wood, Essex, & Willow Cottage, Cowlinge, Suffolk – 27 June

Roger Golding (a.m.) & Bryan Smith (p.m.)

Nine members met in the car park at Broaks Wood (62/784316), south of Sible Hedingham. We were later joined by two others. Broaks Wood is an area of ancient woodland about 62 hectares in extent, now managed by the Forestry Commission. According to their information it is managed with conservation as a priority, while harvesting on average 500 tonnes of timber annually, "mainly pulpwood and firewood but also including everything from beanpoles to furniture grade timber", and coppicing of hardwood species such as sweet chestnut, hazel and ash is practised. Over 200 species of vascular plants have been recorded in the wood. Tim Pyner, our leader for the morning, had previously done a reconnaissance and found nine species of pteridophytes. His challenge was for us to find three more to bring the total to twelve. In fact we managed only two more, but given the relatively limited time and area we were able to cover, I have little doubt that more may be found by diligent searching.

photo: B.D. Smith

Broaks Wood, Suffolk

Anthony Pigott, Jack Hubert, Geoff Winder, Barrie Stevenson, Neil Dickinson, Roger Golding, Pat Acock, Tim Pyner, Gill Smith

Starting along a level track we almost immediately found *Equisetum arvense* in a ditch, and then heading into deeper woodland picked up *Dryopteris filix-mas* and scattered plants of

D. borreri. *Pteridium aquilinum* was frequent but rarely dominant. An interesting colony of mixed *Dryopteris affinis* and *borreri* on a sloping wooded hillside provided an opportunity to compare the two species. Around here we also encountered *D. dilatata* and *Athyrium filix-femina*, and then in a boggy valley area a large colony of *Equisetum telmateia*.

A bank and ditch provided *Polystichum aculeatum* – about 18 plants were counted as well as quite a few sporelings. Hard shield fern is very local in Essex and often occurs as single plants, so this may be the largest colony in the county. Close by on an adjacent bank we found *Polystichum setiferum* near to two very large and old wild service trees (*Sorbus torminalis*), an ancient woodland indicator, here perhaps planted as boundary markers. A little further on we encountered a large stand of coast redwoods (*Sequoia sempervirens*), the remains of an experimental planting, with more *P. setiferum* in a ditch nearby. A flat marshy area among open woodland provided the final fern of the morning, *Dryopteris carthusiana*; with scattered plants of *D. dilatata* also around, we hunted for the hybrid but without success. We then made our way back to the car park for a picnic lunch.

In the afternoon, we drove the 20 or so miles to Willow Cottage, Barrie Stevenson's home on the outskirts of Cowlinge village. Barrie is fortunate to have lived for many years in an idyllic thatched cottage overlooking the rolling Suffolk countryside. Though not my first visit there by a long chalk, it was still a real pleasure because the garden is forever developing and ferns abound either side of the narrow pathways that snake invitingly through his garden. *Polystichum*, *Asplenium* and *Dryopteris* species were all found, but in particular a huge variety of cultivars, which are Barrie's particular favourites. Every so often though, there was something unusual – including *Onychium japonicum*, *Deparia conilii*, *Pseudophegopteris levingei* and hanging baskets of various davallias. Not content with a feast for the eyes, Barrie treated us to tea and cakes on the lawn (in the sun, of course), and later to a sit-down meal in his lounge. What a day!

Lound Lakes, Suffolk – 8 August

Tim Pyner

The sun was shining and a hot day was forecast as 13 members met at the Barn Visitor Centre (63/513003). Lound Lakes is a reservoir serving the Lowestoft area, owned by Essex and Suffolk Water and managed by the Broads Authority. The warden, Holly Berwick, would be showing us around during the morning session, but first we checked a wildlife garden adjacent to the centre. A small representative selection of mainly native ferns was included within the plantings.

As we walked towards the lakes Holly explained some of the management practices for the grassland around the site. No animals are allowed to graze here for hygiene reasons so it is mainly cut and composted as it is not suitable for hay. *Pteridium aquilinum* was frequent along the field margins. As we reached shadier areas *Dryopteris filix-mas* and *D. dilatata* made an appearance. As we dropped down to the lake *Equisetum arvense* was spotted and then in the water, *E. palustre* occurred. Holly lifted a board in marshy grassland and revealed two grass snakes. These are frequent on the site and later a large example sped between a group of pteridologists and across the writer's boots.

Eventually we reached the morning's target area, a section of lake (63/506003) where pillwort, *Pilularia globulifera*, had been recorded in the past. It was last seen in 2006, however, we were unfortunate to visit during a period of very high water levels and the habitat was unsuitable, although the plants may still be present but submerged and out of view. Plantlife are currently funding a project to re-profile the banks allowing for shallow water areas that may help to improve the habitat for pillwort. We made our way back to the Visitor Centre along a narrow lane where *Polypodium interjectum* had been found on a hedgebank by some members on their way to the meeting.

photo: B.D. Smith

Lound Lakes, Suffolk

Pat Acock, Tim Pyner, Howard Matthews, Julian Reed, Barrie Stevenson, Gill Smith, Steve & Karen Munyard, Marti & Andy Martin, Roger Golding, Holly Berwick, Jack Hubert, Bryan Smith

Following lunch we moved on to a wooded area called Homeclose Shrubbery (62/514998). At the entrance was a nice colony of *Blechnum spicant* on a ditchbank with some *Athyrium filix-femina* nearby. *Pteridium*, *Dryopteris filix-mas* and *D. dilatata* were frequent. We also found a few plants of *D. carthusiana.* A large colony of bracken with crispy foliage captured the interest of the group – several even thought it was an attractive aberration!

After returning to our cars we made our way to the village of Henstead to visit the amazing Exotic Garden. The owner, Andrew Brogan, greeted us and explained the history and ideas behind the garden. In a remarkably short period the garden has developed into an ordered jungle of palms, bamboos, succulents, bananas and of course tree ferns. As well as *Dicksonia antarctica* other ferns are scattered through the garden – mainly common ferns but some less well known species such as *Polystichum vestitum* were growing well. Of particular interest was the occurrence of self-set sporelings of *P. munitum* and *P. polyblepharum* on damp, sheltered walls. Later we enjoyed light refreshments supplied by Andrew sitting in the shade of bamboos before we made our way home.

Indoor meeting, Oulton Broad, Suffolk – 7 November **Tim Pyner**

Eleven members gathered for our regular autumn meeting at Oulton Broad. Gill and Bryan Smith welcomed us into their home and had prepared an excellent lunch, which was served on arrival. In the afternoon dry weather allowed us to spend some time in their garden. The ferns were looking very good despite the hot, dry summer and the late date of the meeting. Future plans for the garden sound very exciting.

Later, members were able to present a selection of photos of their travels and BPS meetings from the past year. These were full of interest with a wide range of ferns depicted. The photos of meetings are always interesting as it allows members who have not attended to see what they missed. This subtle enticement hopefully encourages members to make more of an effort the following year. The afternoon was completed with further refreshments and everyone left feeling completely satisfied and looking forward to 2010.

NORTH-WEST

Silverdale, Lancashire – 21 March

Roy Copson

Silverdale is predominantly a landscape of carboniferous limestone hills and low lying basins situated to the north of Morecambe Bay. It incorporates many interesting landforms and associated habitat types. There are areas of limestone pavement, scree and scar, escarpments and coastal cliffs. There are also areas of woodland, limestone grassland, scrub, heath and limestone walls. A rich flora and fauna has developed here and the fern flora is no exception. Our main aim on this field meeting was to study the evergreen ferns.

We began by visiting a population of *Polypodium interjectum* on a cliff edge at the foot of Warton Crag (34/481730), named after the nearby village of Warton. It is a large colony, which has, in equal part with ivy, colonised large limestone rocks, tumbling walls and tree boles in the shelter of a canopy of sessile oak, hawthorn, blackthorn and spindle. In a local bridleway called Occupation Road was another colony of *P. interjectum*. We also found eight hard shield ferns (*Polystichum aculeatum*) in the vicinity.

Our next port of call was Silverdale Cove (34/458749) adjacent to Silverdale village. The wall flora here is worthy of mention: the fern that stole the show was a hart's tongue (*Asplenium scolopendrium*) with fimbriate margins and ramose frond tips. It was accompanied by maidenhair spleenwort (*Asplenium trichomanes* subsp. *quadrivalens*) and wall rue (*A. ruta-muraria*). There was an equally interesting limestone wall flora at 34/461748 on a footpath between Stankelt Road and Woodwell, with rustyback (*A. ceterach*), more hart's tongue, brittle bladder fern (*Cystopteris fragilis*), male fern (*Dryopteris filix-mas*) and maidenhair spleenwort. On a limestone pavement off the same footpath (34/463745) we identified *Polypodium interjectum* and took samples from a suspected *P.* × *mantoniae,* which was confirmed after closer examination by Bruce Brown.

On arriving at Woodwell we adjourned for lunch. Woodwell is a natural spring emerging within ancient woodland at the base of Woodwell Cliffs, and it has long been a popular local beauty spot. Beneath towering yew and beech trees beside the cliffs were colonies of hart's tongue and hard shield fern interspersed between rocks and boulders. Our final area for exploration was in woodland in the environs of Burton Well (34/470750). On the outer side of the perimeter wall of Burton Wood we identified *Polypodium cambricum*, and nearby were hard shield fern, soft shield fern (*Polystichum setiferum*) and a suspected hybrid between these two species (*P.* × *bicknellii*). In Burton Wood we encountered our last *Polypodium* of the day – *P. vulgare* growing on an ash tree.

Some of the evergreen ferns, especially the shield ferns, seemed a little worse for wear having withstood the rigours of the winter weather. This was to be expected but never-the-less it was a rewarding and worthwhile excursion.

Glasgow Botanic Garden & Alastair Wardlaw's garden – 23 May

Bruce Brown & Peter Campion

Seventeen members met up with Frank McGavigan at Glasgow Botanic Garden where we were introduced to David Menzies who was to guide us round. First stop was Kibble Palace, which was fully restored about three years ago. The glass dome is superb and is well depicted on the cover of the 2008 *Pteridologist*. After looking at the strange inhabitants of the carnivorous plant house we moved into the central dome area, which houses the National Tree Fern Collection. The older tree ferns had to be re-housed during the restoration and not all took kindly to the move, but most are now recovering. Other plants

have been introduced and are growing really well, such as a seven-year-old *Cyathea medullaris*. Twenty-three species were present including tall, large trunked specimens of *Dicksonia antarctica* and *D. squarrosa*. Other established cyatheas included *C. brownii* from Norfolk Island, *C. milnei* and *C. australis*, and there was also *Cibotium regale* and *Blechnum gibbum* amongst many others.

After walking through a 100-metre-long hothouse crammed with plants, we entered the Filmy Fern House. In total contrast, the atmosphere here was cool, damp and dim; ideal conditions for the mass of filmy ferns growing alongside mosses and selaginellas. I have never seen *Trichomanes speciosum* growing so happily and abundantly in cultivation before. Beautiful specimens of *Leptopteris hymenophylloides* and *L. superba* vied for space with *Lastreopsis hispida*. It was an absolute delight. The filmies are watered twice a day and clearly thrive on Glasgow tap water.

Most of us, having eaten our sandwiches outside in the cool breezy air, were glad to warm up in the tropical glasshouses. There wasn't enough time left to do them justice, but we admired a lot of selaginellas, tropical aspleniums, the unusual *Psilotum nudum* and hanging fronds of *Nephrolepis cordifolia* and *Pyrrosia longifolia*.

We went in convoy to Alastair and Jackie Wardlaw's garden in Bearsden and were welcomed with a briefing in their comfortable sitting room. Alastair has been cultivating his ferns for over 25 years and has kept complete records of all plantings. His care in documentation extends to a clear label for every specimen (well almost) and strict adherence to a policy of only introducing plants of the best quality and provenance. We were shown examples of his information sheets for ferns and the writer could only marvel at the thoroughness of Alastair's writings.

We than had the opportunity to wander in the garden. Having the sunnier side, Jackie has made a lovely setting for Alastair to use the shady parts for his collection of over 300 different ferns. The tree ferns had over-wintered without protection and with the exception of a *Cyathea dealbata* they had survived, a tribute to the climate of Glasgow and to the siting of them. What a treat we had, the special micro-climates tailored for the filmy ferns *Hymenophyllum wilsonii* and *H. tunbrigense* and for *Asplenium marinum* as well as a selection of hardy ferns from all over the world. We enjoyed Jackie's hospitality with a sumptuous tea. Thank you to Alastair and Jackie and to Frank McGavigan for giving us a whole day of support and expertise.

North Lakes Odyssey – 13 June **Mike Porter**

That part of the Lakes lying to the north of Skiddaw is very different from 'tourist Lake District' with its crowded roads and towns, its rough craggy fells and well-trodden paths. Here is countryside of smooth, lonely hills gently declining to the Solway Plain, of small villages and often deserted roads. The belt of limestone that encircles most of the Lake District is particularly evident here, creating small areas of limestone grassland, deep gills and occasional gorges. It was in this quiet corner of the Lakes that a select group of fern enthusiasts met with the particular aim of studying the various species of *Equisetum* (horsetails) that occur here.

The meeting place was Blindcrake (35/149347), above the Derwent Valley, where, in the gill below the village, our first horsetail, *E. hyemale* was growing in profusion on the steep, wet slopes just above the beck. This species, with its distinctly rough stems, is unbranched, evergreen and often grows in dense stands, appearing rather rush-like when viewed from a distance. Convincing specimens of *Dryopteris affinis* and *D. borreri* were also present in the gill. From here a brief journey took us to a roadside on Setmurthy Common (35/160313)

where we admired the graceful, drooping, branched branches of *E. sylvaticum*, growing with *Athyrium filix-femina*.

A drive over the hills brought us to our third site, along the roadside near Sandale (35/238406). Large quantities of the spectacular *E. telmateia*, with its tall white stems and bottlebrush-like branches, lined the broad verge. Unlike *E. hyemale*, this plant rapidly dies down after the first frosts but its fertile shoots, briefly appearing in early April, are one of the finest botanical sights of spring. This colony has been known for many years and, in this remote area, has not suffered from the depredations of those who would reduce our verges to closely-mown deserts.

photo: P.J. Campion

***Equisetum telmateia* site near Sandale, Cumbria**

Mike Porter, Steve Mees, Melville Thompson, Frances Haigh & Robert Crawford

Lunch was taken on a convenient roadside bench (35/248439) close to Pow Gill, which was to be our next site. Here, having noted a small clump of bird's-nest orchid (*Neottia nidus-avis*) by the trackside, we temporarily abandoned the pursuit of horsetails (although the ubiquitous *E. arvense* was noted) to look at the extensive colony of *Polystichum setiferum* growing deep in the gill, close to the beck. This fern was at one time considered rare in North Cumbria but over the last 20 years more and more sites have been found. Here it was growing with *P. aculeatum* and there were one or two candidates for their hybrid, *P.* × *bicknellii*. Here too was much *Blechnum spicant*. However, it was at our fifth site, Thackthwaite Wath Bridge (35/265434), that a fine, large fern, exhibiting characters of both *P. aculeatum* and *P. setiferum*, was seen and boldly declared by the leader to be the hybrid!

Another drive brought us to Caldbeck, where the deep limestone gorge known as the Howk (35/319397), with its bobbin mill and waterfalls, gave us a further selection of ferns, including more examples of both *P. aculeatum* and *P. setiferum* together with *Asplenium scolopendrium*, *A. trichomanes* subsp. *quadrivalens*, *A. ruta-muraria*, *Polypodium interjectum* and fine, large specimens of *Cystopteris fragilis*.

Refreshed by tea and fruit cake, we moved on to our seventh and final site of the day – the acid, boggy area situated beneath the steep eastern face of Carrock Fell (35/352341). Here were numerous, if rather small, specimens of both *Equisetum fluviatile* with its smooth, often unbranched, strikingly hollow stems and *E. palustre* with its upcurved branches, more or less solid stems and broad white scarious margins on black sheath teeth. There were many opportunities to compare and contrast the two, which grew in close proximity, *E. fluviatile* usually in the wetter areas.

Here ended a very companionable day as, for the last time, we got into our cars and headed for home.

Tilberthwaite, near Coniston, Cumbria (35/306010) – 4 July **John Grue**
(Leader: Alec Greening)

Tilberthwaite is a fascinating area, complex both geologically and topographically, and scattered with quarries, levels and adits betokening a long history of human endeavour. The rock is mainly metamorphosed Tilberthwaite Tuff, known locally as Westmorland green slate. There are many small oak woods, most of which have grown since the major phase of slate and copper extraction, which lasted from the 1600s to 2001. It has a secretive and remote atmosphere, with some very difficult walking over rock spoil and large scree. Fortunately we had in Alec Greening a guide who knew every corner from his boyhood adventuring. Ten of us met, on a day that promised rain.

Our first foray from the ample car park was to the west, to Penny Rigg mine, which typically for this area was a copper mine, then a slate mine and quarry, then a copper mine again. We rapidly ticked *Pteridium aquilinum*, *Cryptogramma crispa, Polypodium vulgare* and *Asplenium trichomanes*. A small stream gave *Oreopteris limbosperma, Blechnum spicant* and *Dryopteris filix-mas*. A copper spoil heap looked a good *Asplenium septentrionale* site, but we drew a blank and decided to keep looking elsewhere. The first adit we found had *Dryopteris dilatata, D. affinis* agg. (we thought *D. borreri*), *Asplenium ruta-muraria*, and what we thought to be juvenile *Athyrium filix-femina*. Tilberthwaite quarry (Penny Rigg to the OS) yielded the first of the many *Asplenium adiantum-nigrum* we were to see that day; surprisingly rare in the Lake District, for some members these were the first Lake District plants they had seen. Several cracks were completely filled with *Polypodium vulgare* and *Dryopteris filix-mas*. A number of clearly distinct *D. affinis* agg. plants gave us food for thought but no-one felt sufficiently assertive to make a determination.

photo: J.D. Grue

Tilberthwaite, Cumbria – Robert Sykes with male ferns

We returned to the car park, and then set off north seeking the numerous small quarries hidden in the forest. There were some interesting crested *Athyrium filix-femina*, not uncommon in the South Lakes. Nearby, two polypodies, though very different in frond shape, both proved on examination with a hand-lens to be *P. vulgare*. We admired the numerous epiphytic polypodies and discussed a remarkably foliose *Dryopteris*, whose absence of sporangia left us puzzling. The next set of quarries, around Mirk Hole, gave more of the previous taxa and a text-book *Dryopteris affinis* subsp. *affinis* that all could agree on. We searched in vain for *Hymenophyllum*. There seemed to be no shortage of suitable habitats; we wondered if the rock surfaces were perhaps too new.

After lunch we visited several more quarries. They were all worth the visit for rock formations and for handsome displays of ferns, even without seeing anything new. Crossing some spoil heaps we commented on the absence of *Cystopteris fragilis*, and were inevitably rewarded by several plants just a few metres on! A little further on, where the path crossed a stream and a wall there was one of those most rewarding spots, with *Phegopteris connectilis*, *Asplenium trichomanes, Cystopteris fragilis* and *Athyrium filix -femina* growing in lush profusion. We were shown a wet quarry full of horsetails. We were happy to identify *Equisetum arvense* and *E. fluviatile*, but had to check in 'Stace' (up to this point mere rucksack ballast) to confirm the hybrid *E.* × *litorale*.

A further fairy dell, charmingly called Welcome Nook, reached by crawling under fallen trees, gave us the best aesthetic fern experience of the day. There were enormous beech ferns, magnificent *Asplenium adiantum-nigrum* and cracks decked with *Cystopteris*, as well as many other ferns. This made a satisfying end to our ferning, though we felt that, although we had seen a lot, there were some conspicuous absences. Was there really no oak fern? No filmies? No *Asplenium septentrionale*? Further exploration would certainly be worthwhile.

On returning to the car park we had just started to admire the Andy Goldsworthy sheep-pen sculpture when the heavens opened.

Clapham & Trow Gill, North Yorkshire – 5 September **Bruce Brown**

The attractive Pennine village of Clapham (34/745692) was the start point for eleven members on a rather dreary drizzly day. *Asplenium ruta-muraria* was spotted on the car-park wall, closely followed by *A. trichomanes* subsp. *quadrivalens*, *A. scolopendrium* and *Dryopteris filix-mas*. The most outstanding and numerous ferns in the village were the polypodies, adorning virtually every wall and lining the beckside, mostly *Polypodium interjectum*, with a little *P. vulgare* opposite the church. The star attraction though had to be the large colonies of *Asplenium ceterach* on walls surrounding the Ingleborough Estate Office; in this wet summer they were in really superb condition.

From the north end of the village we paid our dues to enter the Ingleborough Estate nature trail, which zigzags up to the dam then follows the lakeside as Clapdale Drive. Along here were *Pteridium aquilinum*, *Athyrium filix-femina*, *Dryopteris dilatata* and *Blechnum spicant*. The estate was the home of the celebrated plant collector Reginald Farrar, noted for his books on rock gardening and travels in China and he was reputed to have fired seeds from his shotgun towards the cliff at the far side of the lake to 'naturalise' his rock plants. Around the head of the lake exotic bamboos and Himalayan rhododendrons were still to be found and amongst them were small colonies of *Phegopteris connectilis* and *Gymnocarpium dryopteris* (with thanks to Mike Canaway for this record). *Dryopteris borreri* was the commonest of the *D. affinis* complex, but we also saw some convincing specimens of *D. affinis* itself and courtesy of a previous visit with Ken Trewren were able to point out a *D. borreri* morphotype *robusta* growing side by side with normal *borreri* and also *D. affinis* subsp. *paleaceolobata*.

Having crossed the Craven Fault onto limestone rock, more calcareous species began to appear, such as *Cystopteris fragilis* and the always elegant *Polystichum aculeatum*. A well-built stone grotto provided a good excuse for a lunch stop, but in the rather wet weather it was standing room only inside! We exited the woodland into open country and followed the valley with its many springs and small waterfalls and with *Equisetum arvense* along the ditchsides, soon arriving at Ingleborough Cave where some members took advantage of a guided tour into its interior.

The rest of us continued upstream, eventually turning westwards into the steep-sided gorge of Trow Gill (34/755716). The Yorkshire Fern Group has studied the polypodies on the limestone cliffs here, and so I was able to point out colonies of very large and wide-fronded *Polypodium cambricum* growing along the ledges, which to examine closely involved a very 'nettley' scramble up the scree. *P.* × *font-queri* has also been identified but in general appearance is indistinguishable from the *P. cambricum* and too high up to reach easily. At the top of the gorge some smaller crags yielded occasional tufts of *Asplenium viride*. It is not far from here to the famous pothole of Gaping Gill, which some members wished to see, but with heavier driving rain it was decided to retreat. By the time we had retraced our steps to Clapham the sun was at last shining.

Annual General Meeting, Holehird, South Cumbria – 3 October Peter Campion

Twenty-eight members assembled for the sixteenth AGM. The reports showed that we had had another good year with a varied programme of events. Thanks are due to the leaders who persevered even under adverse weather conditions. The trip to the Museum at Manchester was very much appreciated and compliments paid to Yvonne Golding for a great event. Formal business was dealt with swiftly and was followed by a productive discussion on the 2010 programme. Support was expressed to Mike Porter who had been asked to organise a three day national event in the North Lakes at the end of September.

We much enjoyed watching an old episode of 'Secret Gardens' presented by Alan Titchmarsh, which featured Nan Hicks's garden. After lunch Peter Campion showed a selection of photographs of New Zealand ferns from his visit in 2008.

The prize for the best indoor fern was won by Melville Thomson, and for the best outdoor fern, Robert Sykes. The photographic competition was won by Ruth Berry Piearce for her *Asplenium scolopendrium*. After an enjoyable tea provided by members the meeting closed at 3.45p.m.

BOTANICAL CORNWALL GROUP Ian Bennallick & Matt Stribley

Marsland Valley (Cornwall side), north of Bude (21/2116) – Sunday 17 May

This meeting was a spring walk through woodland in the Marsland Valley Nature Reserve to record in the northernmost part of Cornwall along the valley stream that marks the boundary between Cornwall and England (Devon!). Meeting near Marsland Manor (21/217169) a group of six braved unseasonably cloudy, cold and windy weather and walked along the lanes to Gooseham Mill. The expected ferns of Cornish hedges were seen, including *Dryopteris dilatata*, *D. affinis* subsp. *affinis*, *Polystichum setiferum*, *Polypodium interjectum* – some large (foot-long) forms seen here, *Athyrium filix-femina*, and masses of *A. ruta-muraria* on walls at Gooseham. The lane dropped steeply into the Marsland Valley down to Gooseham Mill where we met Jane Pilkington, whose husband manages the Devon/Cornwall Wildlife Trust reserve. The reserve is managed especially for butterflies (many pearl-bordered fritillaries had already been seen in April), and the scrubby areas on the bracken hillsides have been steadily cleared over the years. Only days before, Jane had refound *Ophioglossum vulgatum* in grassy patches under sparse bracken on a steep hill nearby (first seen here in 1970 and last seen in 1989), and this was our goal for the morning. This species is extremely localised in Cornwall, being found in small numbers at only ten sites since 2000, though these sites cover the breadth of the county. At Marsland we counted about 100 plants of *Ophioglossum* in a relatively small area in species-rich grassland under bracken, a habitat similar to other recently found sites for it in Cornwall. *O. vulgatum* could be under-recorded in Cornwall, as there

is a lot of this type of habitat in places (especially on Bodmin Moor) and it should be looked for from April to June.

Pleased with our finds, we walked back to Gooseham Mill, and the weather swapped seasons – we were soon experiencing warm sunshine and blue skies! After a packed lunch at Jane's idyllic cottage we walked along the valley towards the sea. Another species that was targeted for the day was *Osmunda regalis*, which had been recorded in 1997 but not since. Surprisingly, in the far north-eastern part of Cornwall royal fern is extremely rare, despite a lot of suitable habitat – wet woodland and heathy, damp hedges and ditches. Two of the group walked along the river and in very wet willow and alder woodland (seemingly perfect for royal fern) looking for old fronds, but none were seen. After meeting up with the others at a footbridge, the group walked back towards Marsland Manor along a shaded and narrow wooded track where the banks were luxuriant with *Dryopteris aemula* (some very large plants), *Blechnum spicant* and *Athyrium filix-femina*.

Tuesday 18 August

A second visit in the year was a summer walk along the coastal part of the Marsland Valley Nature Reserve. In warm and sunny weather we met at the same place as in May and walked down the valley towards the sea along the coastal path to Marsland Mouth. A quick look along the base of the high, eroding slaty cliffs failed to reveal *Asplenium marinum*; although sea spleenwort had not been recorded here before, it is common all around the Cornish coast except for cliffs north-east of Boscastle. The cliffs along this stretch are inaccessible in many places due to constant cliff falls, and in places are 700 feet high! Retracing our May route, we walked down the narrow shaded lane with the large *Dryopteris aemula* plants and up the valley paths to Gooseham Mill. A lot of *D. affinis* agg. plants were present in a myriad of forms (we decided to wait until the BPS *D. affinis* agg. identification meeting in this area in September before we attempted to name them!) After a packed lunch, again with Jane in her garden, we re-visited the *Ophioglossum vulgatum* site. How different this hillside looked! Patchy bracken almost five feet high covered the hillside, and the area where we had counted 100 adder's tongue plants was completely covered with bracken. This reinforced our view that *O. vulgatum* needs to be searched for before the bracken reaches its summer height. This was an enjoyable couple of days in one of Cornwall's (and Devon's) hidden corners.

Goodagrane Quarry & Constantine area (10/7432), east of Helston, West Cornwall – Wednesday 22 July

The aim of this visit was to record in and around old granite quarries and mine workings on the elevated Carnmenellis granite area. Five members met at Goodagrane Quarry (10/743323), now used as an outward bound youth centre. After a lengthy health and safety debrief we explored the varied landscape. Three flooded granite quarries had bunches of *Osmunda regalis* growing out of seepages in the quarried rock-faces, with *Blechnum spicant* and luxuriant *Athyrium filix-femina* nearby. Towards the lower part of the valley, where a footpath crossed a small river flanked by wet willow woodland with large *Osmunda* plants (10/746320), one of the group stated that this was a place where *Oreopteris limbosperma* ought to grow. Though frequent beside streams and ditches on Bodmin Moor in East Cornwall, at a few scattered places around the St Austell granite area and isolated outliers elsewhere in East Cornwall, it had not been recorded in West Cornwall since 1977 – at a site a few miles away on the Carnmenellis granite in the Porkellis Valley (10/668336). Amazingly, within two minutes a few fronds of *Oreopteris* were found; a completely new site for this fern in West Cornwall.

SCOTLAND

Frank McGavigan

Ness Glen, East Ayrshire – 30 May

(*Participants*: Bridget Laue, Paul Sharp, Andy MacGregor, Frank & Linda McGavigan.)

Our primary aims for the day were to view filmy ferns in Ness Glen, find moonwort at nearby Auchalton Meadow, and finish the day with a leisurely stroll round Culzean Castle Gardens. The filmy fern was tatty and desiccated, we couldn't find any moonwort, and we never made it to Culzean. Disappointing day, then? Not a bit of it – the strength of the late spring sunshine was matched only by the warmth of the welcome we received from Mark Gibson, the landowner of Ness Glen, who, since his arrival ten years ago, has transformed the estate by welcoming anglers, canoeists, horse riders, walkers and naturalists, including of course pteridologists. And what a lot of ferns there were for us to see – nothing particularly rare but a wide variety of species.

First, accompanied by Mark, we walked round the policies of his home, Craigengillan House (26/475027), and admired the mass drifts of *Equisetum sylvaticum*, the most beautiful of the horsetails, which bordered the paths punctuated by water avens, greater stitchwort, bugle, and a patch of the brilliant globe flower. The wood horsetail was so plentiful that at first we hardly noticed the other ferns, but present were *Athyrium filix-femina*, *Blechnum spicant*, *Dryopteris dilatata*, *D. filix-mas*, *Equisetum arvense*, the unfurling fronds of *Oreopteris limbosperma*, *Polypodium vulgare* (in the trees), *Pteridium aquilinum* and members of the *Dryopteris affinis* agg. (It was too nice a day and we too lazy to attempt a closer identification, though *borreri* was mentioned.)

You can approach Ness Glen from either end. We chose to start in the north (at 26/477028) and take the higher path before turning (at 26/477015) and returning along the riverside path. The upper path leads through mixed deciduous woodland and we saw much the same fern flora as already encountered, with the exception of the *Equisetum*, and with the addition of beech fern and oak fern in profusion. The return path hugs the burn through a deep ravine (making it impossible to get accurate GPS locations). There must be some basic leaching from the rocks as we began to notice *Polystichum aculeatum* (in abundance), *Cystopteris fragilis* (a few), and *Aspleniums* – first *A. trichomanes*, then some *A. viride*, then Paul spotted *A. adiantum-nigrum*, and finally *A. scolopendrium*. The filmy fern, when we found it, was *Hymenophyllum wilsonii*, extremely dried up and bedraggled – surprising really as the previous weeks had not been particularly dry.

Afterwards we drove to Auchalton Meadow (26/335036), a traditional grazed meadow now owned by the Scottish Wildlife Trust, in search of *Botrychium lunaria*. Despite a fairly thorough scouring of the site we could not find a single plant. But the meadow was full of angiosperms, including several orchids ready to burst into flower. Despite signs of grazing, the grass was fairly rank, which might account for the absence of the moonwort or at least our inability to spot it. By this time the unaccustomed sunshine was taking its toll on our stamina and we decided to give Culzean a miss and go instead for a much appreciated cup of tea.

Isle of Bute, Firth of Clyde – 20 June

(*Participants*: Mary Gibby, Tim Godfrey, Frank Katzer, Bridget Laue, Frank McGavigan, Chris Nicholson, Paul Sharp.)

The story of the rediscovery and restoration by Wallace and Kath Fyfe of Ascog Fernery on the Isle of Bute (26/107630) is well known and was described by James Merryweather in the 2003 edition of the *Pteridologist*. Sadly in recent years both Wallace and Kath have died, greatly missed by all who knew them. However, their daughter, Susannah and her husband, Graham, despite three young children and the need to earn a living, are

determined to keep the fernery and garden open to the public. To help out, the Scottish group formed a work party for a day to help rid the fernery of invasive weeds and liverwort, a task that needs to be repeated at frequent intervals, a bit like painting the Forth Bridge. Unlike that job, the task is not particularly arduous (an old table knife helps), and convivial company made the morning go quickly with the splendid lunch provided by Susannah contributing to the enjoyment. We expect to return on a regular basis. Don't let a little bit of liverwort stop you visiting this wonderful fernery for yourself, and don't miss out on the beautiful garden attached.

photo: T. Godfrey

Work Party at Ascog, Bute
Chris Nicholson, Mary Gibby, Frank McGavigan, Bridget Laue, Paul Sharp, Frank Katzer & Tim Godfrey

Leaving Mary and Christine to continue the weeding at the fernery, the rest of us spent the afternoon in the north of the island at Balnakailly Wood in the company of Angus Hannah, the local vice-county recorder. Leaving our cars at the road end (at 26/026744), we walked along the old track before entering the wood from the north. Balnakailly Wood is typical west coast, damp, acidic, oak woodland that looked as if it had been there forever until Angus pointed out that the oak species was *Quercus robur*, not *Q. petraea*, and had therefore been planted. Our main interest here was to find filmy ferns and *Dryopteris aemula*. It didn't take us long. Both *Hymenophyllum wilsonii* and *H. tunbrigense* were growing over rocks and old tree stumps. (Tunbrigense with teeth, wilsonii without.) There was plenty of *D. aemula*, with its characteristic pinnules crimped upwards, and indeed there was a good opportunity to compare it with the nearby *D. dilatata*, with pinnule edges curved downwards, and *D. expansa*, with 'flat' pinnules. Frank Katzer spotted *D. carthusiana*, which pleased Angus as he had not known it to be present in the wood. Of the *D. affinis* agg. we confidently identified only *D. affinis* itself. *Athyrium filix-femina*, *Blechnum spicant*, *Oreopteris limbosperma* and *Pteridium aquilinum* subsp. *aquilinum* completed the woodland species. In the vicinity of the gorge that runs through the wood there were *Gymnocarpium dryopteris* and *Phegopteris connectilis*, and in the gorge itself, where there must be some basic seepage, there were plants of *Polystichum aculeatum* and *Asplenium trichomanes*. Finally it would be remiss not to mention the *Polypodium vulgare*, epiphytic in the trees. In truth there may have been a lot more to find, but every time we stopped to study a fern we rapidly became fodder for the local midges, so, if you visit, go prepared.

Benmore & Puck's Glen, Argyll & Bute – 18 July

(*Participants*: Jess Barrett, Mary Gibby, Tim Godfrey, Bridget Laue, Frank McGavigan, Chris Nicholson, Paul Sharp, Maurice Wilkins.)

Benmore Botanic Garden (26/144856), a western outlier of RBGE, has stretches of hillside themed on different botanically rich parts of the world – Bhutan, Chile, Japan, etc. – as well as a more formal walled garden and a famous avenue of *Sequoiadendron*, enough to keep

you busy for a full day. In each area there are plenty of ferns, some planted exotics but also many natives, including *Dryopteris aemula*, pointed out by Mary. However, the main purpose of our visit was to view the newly restored Victorian Fernery, and we were delighted to be given privileged access before the official opening in September.

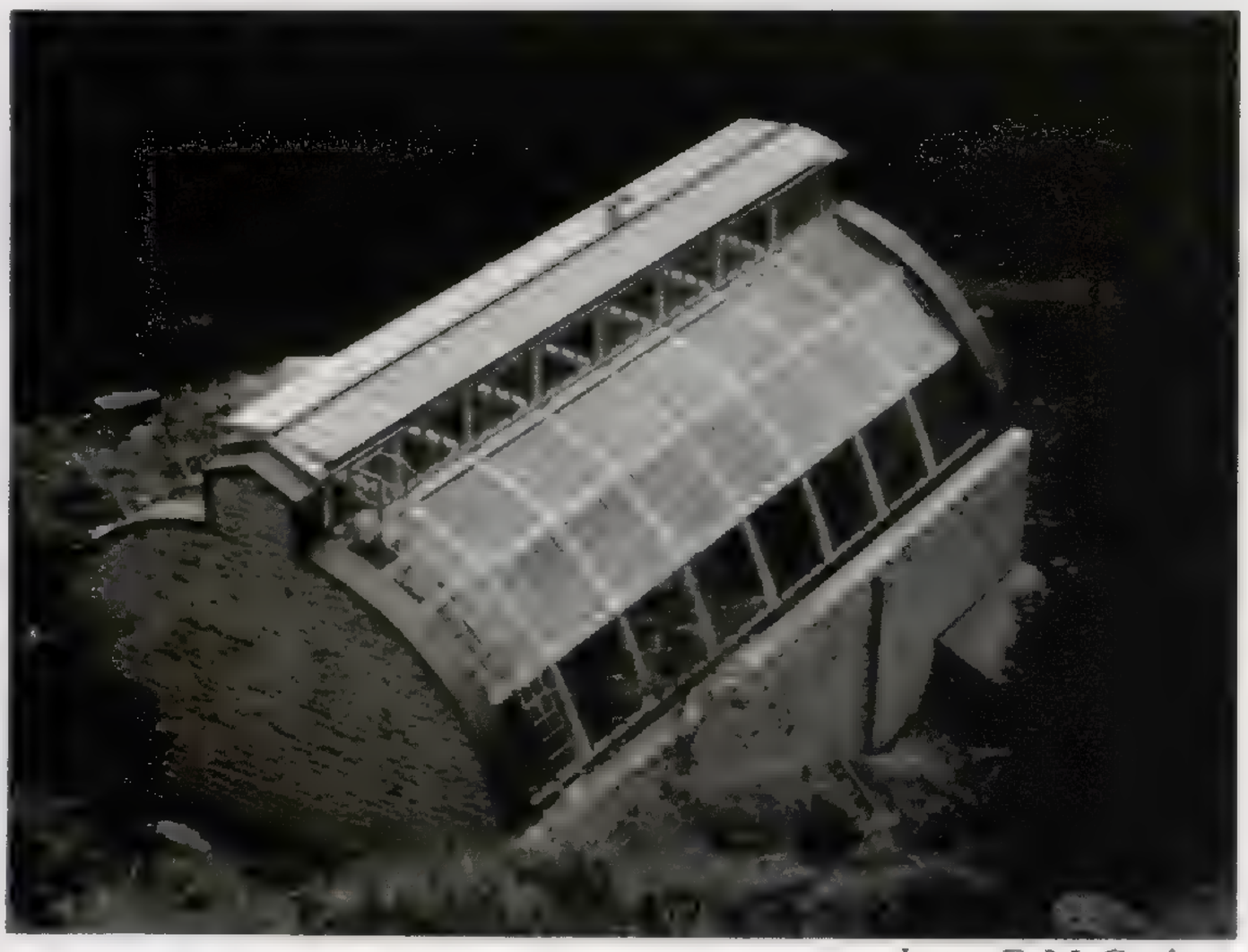


photo: F. McGavigan

Benmore Fernery

The building is oblong in plan with stone walls and a barrel-shaped, glass roof surmounted along its full length by a glazed lantern. The design is the architect's best interpretation of what the original must have looked like. The structure is built into the side of a hill and to accommodate this, the floor is on two levels, making the internal scene very dramatic. Andy Ensoll of RBGE has taken full advantage of this in his planting of the ferns; in particular he has sited two magnificent specimens of *Sadleria cyatheoides* on the upper level but overlooking the lower level. On our visit the light was catching the red hue of the newly emerged fronds to great effect. Mary gave us a list of some 80 species that the fernery will contain once planting is complete, but I won't bore you with a catalogue of names, some of which are rare enough not to appear in any of my reference books. Go and see for yourself. After all your Society donated £2,500 towards the restoration fund.

After walking back to the garden entrance along Mary's proposed fern trail we had lunch in the excellent and reasonably priced Benmore café. Then it was off to the nearby Puck's Glen (car park at 26/147839), a must for any visitor to the area. Dark, damp and mysterious, the glen is the perfect habitat for filmy ferns, and both *Hymenophyllum tunbrigense* and *H. wilsonii* thrive here. Indeed I don't think I've seen them in greater abundance or larger specimens anywhere else. Whole cliff-sides are covered with filmy fronds, the atmosphere being kept constantly moist by the burn that runs down the glen. Not just filmies, but other, more robust ferns are everywhere also – *Athyrium filix-femina*, *Blechnum spicant*, *Dryopteris affinis*, *D. borreri*, *D. dilatata*, *D. filix-mas*, *Oreopteris limbosperma*, *Polypodium vulgare* and *Pteridium aquilinum* you would expect, but we also found *Gymnocarpium dryopteris* and *Phegopteris connectilis*, and the calcicole species *Asplenium scolopendrium* (including a naturally crested specimen), *A. trichomanes* and *Polystichum aculeatum* (including a beautiful plant where every frond, with one exception, was forked). As its name implies, Puck's Glen is a fairy land, full of ferns and easy of access with a well-made path and bridges over the burn – highly recommended for any fern lover.

Assynt, Sutherland – 29-30 August

(*Participants*: John Edgington, Roland Ennos, Ian & Pat Evans, Tim Godfrey, Roger Golding, Yvonne Golding, Frank McGavigan, James Merryweather, Richard Thorne, Ken Trewren, and, for Saturday morning, Clarinda Chant & Lyn Fairchild.)

I cannot begin to explain the complex geology of this remote part of Britain but combine it with the prevailing harsh weather conditions and you have the makings for unique pteridology, at least for Scotland. Ian Evans and his wife, Pat, who is the local vice-county recorder, had prepared a full programme to reflect this situation, having recce'd each site

over the preceding weeks, and I must record our gratitude to them. Local knowledge makes such a difference on these occasions. They even managed miraculously to keep the worst of the weather at bay for most of the time.

We began with hill flushes and burns north of Inchnadamph to look for *Equisetum* species. At the first (Lairig Unapool) we found *E. hyemale* plentifully at 29/2356 2752, but despite searching were unable to locate *E. variegatum* and their hybrid *E.* × *trachyodon*, which had previously been recorded in the vicinity. At the second (Allt a'Chalda Beag) we found *E. variegatum* beside the raging burn at 29/2418 2391, and further up its course. We then moved over to an adjacent limestone flush, where we found *E. hyemale* at 29/2431 2417 and *E. variegatum* in smaller quantity nearby. Richard spotted another horsetail that did not appear to be either of these, so we concluded that it might be the hybrid, for which this would have been a new locality. Unfortunately expert opinion (Heather McHaffie) later declared it to be just *E. variegatum*, which apparently is a variable species. We correctly identified *E. palustre* and *Selaginella selaginoides*, were pleased to see growing on rock *Asplenium ruta-muraria* and *A. viride*, and also added *Huperzia selago* and those two acid-loving ferns, *Blechnum spicant* and *Oreopteris limbosperma.*

South of Inchnadamph, overlooking the A837, are the limestone cliffs of Creag Sròn Chrùbaidh, where we headed after lunch (29/249199). In the scree below the crags we found *Asplenium adiantum-nigrum*, *A. ruta-muraria*, *A. trichomanes*, *Cystopteris fragilis*, *Polystichum aculeatum* and *P. lonchitis*, but the crowning glory was the hybrid between these last two, *P.* × *illyricum*, which was so plentiful that we concluded that it must be fertile and had spread here by self-sporing rather than the hybrid repeatedly occurring spontaneously. Further north, on the same cliffs, Ian showed us the site for *Gymnocarpium robertianum* (29/2502 2029) where it is flourishing and spreading (unlike at its only other site in Scotland, near Schiehallion, where it is confined to one small gryke). James even found that it had spread to the bottom of the scree. Away from the limestone we added *Athyrium filix-femina*, *Dryopteris borreri*, *D. cambrensis* and *D. filix-mas* to our tally, and also near the road, *Equisetum arvense* and *E. palustre.* Pat pointed out *Tulostoma niveum*, the white-stalked puffball, which occurs only at two sites, here and Braemar.

photo: J.W. Merryweather

***Polystichum* × *illyricum* at Assynt**

Ian and Pat next took us to the shores of Loch Borralan, and here we were lucky that they had previously done a recce for they were able to take us to the exact spot (29/2563 1143) where James in waders was able to put his hand in the water and immediately fish out *Pilularia globulifera.* The *Equisetum fluviatile* we found on the way back seemed trivial in comparison. That evening we enjoyed a communal meal at the remote Drumbeg Hotel, where the menu looked as if it hadn't changed since the 1960s but the food was superb and we were glad to be inside while it poured outside.

Sunday morning saw us on the lower slopes of Canisp in search of *Diphasiastrum* × *issleri*, the hybrid between *D. alpinum* and, well, there seems to be some dispute about this but most people now accept, *D. complanatum*, which of course is not now found in the British Isles. I leave that for others to argue over. The features that distinguish the hybrid from *D. alpinum* are also complex and open to debate, but for me the clearest indicator is colour. For anyone walking in the hills in Scotland the grey-green of *D. alpinum* stands out despite its low, creeping habit. The *D.* × *issleri* we saw lacked the grey tinge and was almost yellow-green.

We recorded it at 29/2349 1664 but it stretches in a long, narrow band at the same altitude (approximately 240 metres). We wondered if there had originally been only one plant that had spread by creeping and dying out behind, leaving scores of separate plants. Ian then led us to a *Lycopodium annotinum* site at 29/2268 1723 where we ate our sandwich lunches. Somewhere along the way we also noted *Huperzia selago*, but this hillside is notably bare of vegetation.

As most of us were not leaving until the following morning, Ian and Pat took us further north to experience some coastal woodland. On the way we stopped at Loch a Chreagain Daraich (29/1739) to admire a large patch of *Osmunda regalis* on an island in the middle of the loch. Unfortunately the fern was too far away to examine properly, but Tim spotted some growing in the ditch beside the road, and we all duly photographed these tiny specimens, frustrated as we were at not being able to get close enough to the magnificent clump on the island. Loch a' Mhuilinn wood (29/1639) consists in the main of hybrid oaks festooned with many species of lichen. Here, before we were driven away by the midges, we noted *Athyrium filix-femina*, *Blechnum spicant*, *Dryopteris borreri*, *D. cambrensis* (or was it *D. affinis*? – there was disagreement among the experts – what fun), *D. dilatata* (no dispute), *Equisetum arvense*, *Polypodium vulgare*, and, of course, *Pteridium aquilinum*.

This had been a superb weekend – Yvonne described it as 'illyrical' – in wild territory with magnificent mountains, beautiful coastal scenery and wonderful ferns and lycophytes. I urge you to make the effort to visit.

Coire a Ghabhalach, Beinn an Dothaidh (27/340404), Argyll – 12 September

(*Participants*: Mary Gibby, Frank Katzer, Frank McGavigan, Heather McHaffie.)

This was our annual *Woodsia alpina* monitoring day and once again we were armed with detailed information from John Mitchell's survey of the early 1980s. But first we had to reach the site, which involved a long trudge up to the col between Beinn an Dothaidh and Beinn Dorain along a very muddy and ever-steepening track, then a descent into the glen on the other side before another climb north to the *Woodsia* site.

At least that is what we should have done but Frank Katzer and I, having left Heather and Mary at the col to botanise, decided to contour round and avoid the last ascent by keeping high up close to the cliffs – a costly mistake as the cliffs weave in and out and the terrain undulates steeply, dangerously so in places. It proved to be far longer and more exhausting than the conventional way, but there were compensations, as we were able to spot quite a range of species that we would otherwise have missed. The rock is of mixed geology with some limestone in places but otherwise acidic so it supports *Blechnum spicant*, *Cryptogramma crispa*, *Dryopteris dilatata*, *D. expansa*, *D. oreades*, *Polypodium vulgare*, *Gymnocarpium dryopteris*, *Phegopteris connectilis*, *Diphasiastrum alpinum*, *Huperzia selago* and *Selaginella selaginoides*, as well as *Asplenium trichomanes*, *A. viride* and *Polystichum lonchitis* (including one plant amazingly growing out of a clump of *Blechnum*). Add to these the *Athyrium distentifolium*, *Dryopteris affinis* agg., *Oreopteris limbosperma* and *Pteridium aquilinum* that we had seen earlier, and we had amassed quite a total.

Then Frank Katzer spotted an isolated clump of *Woodsia alpina* at 27/334401 with 11 fronds, before, eventually, we reached the main *Woodsia* site. Here, in a weathered and fissured limestone outcrop, we counted 36 crowns, six more than John Mitchell's tally 28 years earlier, and including one plant that looked new this year. We photographed the position of each crown and took note of the number of fronds at each. I am now busy preparing a marked-up composite photograph for the record, which should aid monitoring efforts in the future. But for now the *Woodsia* at this site seems to be prospering.

Then came the long trek home. We eventually reached the car park after 7p.m. Fortunately it had been a beautiful day with a successful outcome, but I'm beginning to think that *Woodsia alpina* monitoring is a task for younger pteridologists. Are there any?

Bridget Laue & Paul Sharp's Garden, Edinburgh – 3 October

(*Participants*: Adrian Dyer, Grant Fortune, Mary Gibby, Frank Katzer, Heather McHaffie, Frank McGavigan, Bridget Laue & Paul Sharp.)

This had been Bridget and Paul's idea – a get-together at the end of the season to exchange information and plan next year's outings, a kind of AGM without the formality. They provided the hospitality including an excellent lunch and kept us supplied with tea and coffee throughout the day.

First we had a look round their newly created fern garden (hard landscaping by Paul, planting by Bridget) and what a revelation this was. Most fern gardens seem to have evolved by natural selection of random species filling available niches but theirs is clearly the product of intelligent design. In a neat and tidy setting the ferns are carefully placed so that they can be viewed to their best advantage. Amidst other contrasting ferns or small evergreen conifers and shrubs, Bridget has managed to pack into a small space some 125 species or varieties with few duplicates. Most notable for me was the best specimen of *Polystichum setiferum* 'Ray Smith' any of us had ever seen, and that most delicate-looking fern *Onychium japonicum* standing up to the cold and wind of Edinburgh.

Frank Katzer had brought along a variety of fern books for sale, and many of us had brought spare ferns to swap, two innovations for us but ones we shall repeat. I came away with *Hypolepis millefolium* with the hope that my cold, wet garden will keep its wandering character in check. Then we discussed next year's programme and luckily everyone agreed with my suggestions – the day was getting better and better.

The afternoon was spent looking at slides from various fern locations at home and abroad: first a few superb fern photographs from Central America contributed by Nick Balfour, then pictures from Bridget and Paul's recent trip to Ecuador and the Galapagos. (The experts in the audience were able to help out by identifying the genus of some of the ferns though not pinpointing the species). Then Adrian brought us back to home territory and showed some of the fern successes and failures he has experienced over the years in his Edinburgh garden. Finally Heather gave us an update on a *Woodsia alpina* colony that seems to have recovered from apparent destruction by excess water. A fine mix of pictures and interest to keep us away from the cold, blustery wind outside, too cold in fact to venture up Blackford Hill which had been our original intention and where the *Asplenium septentrionale* and *Polypodium cambricum* we'd been going to see are now apparently covered with brambles.

SOUTH WALES AND THE BORDERS

Machynlleth, Mid-Wales – 4-5 July

Jonathan Crowe (Saturday)
& Sue Dockerill (Sunday)

The heat wave of recent days giving way to cooler showery conditions promised a more comfortable experience for the dozen members assembled for the inaugural field meeting of this Regional Group. Six of the party were veterans of the National Meeting held in this area in 2003. Throughout the weekend we were accompanied by Arthur Chater, the BSBI Recorder for vice-county 46, Cardiganshire. His willingness to share his detailed knowledge of the area proved invaluable.

Our first site was that of the former Cwmsymlog lead mine (22/697837), which had been worked almost continuously from the 16th to early 20th century. The importance of the site is reflected in its designation both as an SSSI and a Scheduled Ancient Monument for its archaeological interest. On arrival, Arthur gave us a general introduction and kindly distributed an annotated sketch map showing important locations with botanical and historical notes. Near a restored chimney we found abundant *Asplenium septentrionale* growing on the old mine tailings. Arthur informed us that its population has increased some

30% since 1991 for reasons that remain unclear. A nearby mortared garden wall supported *A. adiantum-nigrum* and *A. ceterach*. Opinion was divided as to whether some of the latter might be var. *crenatum* or merely luxuriant specimens of the type plant. East of the chimney a water-wheel pit was host to numerous wall ferns including *Cystopteris fragilis*.

photo: B.D. Smith

Cymsymlog lead mine, Ceredigion, mid-Wales

Roger Norman, Brian Dockerill, Jonathan Crowe, Susan Lewis,
Sue Dockerill, Clive Jermy, Gill Smith, Christine Mullins, Sue Norman,
Arthur Chater, Joy Neal, Martin Rickard

A half-a-mile trip eastwards brought us to Llyn Pendam (22/709839). This is an artificial lake, which had been built to feed the numerous mine workings of the area with water power. Arthur and Clive Jermy gallantly donned wading boots and using improvised tools managed to dredge up specimens of *Isoetes echinospora*. These were passed around so we could appreciate the structure of this aquatic quillwort with its megaspores and microspores.

After picnicking we moved on by car to Esgair-hir and Esgair-fraith (22/7391 to 7491), another former lead mining complex. A short distance into the site, by a small stream, was a fine drift of *Equisetum* × *dycei*. On the opposite bank Arthur collected material for a chromosome count from a large plant that Ken Trewren thought on previous visits might be *Dryopteris* × *convoluta*, *D.* × *complexa* or possibly just *D. cambrensis*. A little further on was a large patch of *Ophioglossum vulgatum* with *Botrychium lunaria* close by. In nearby bilberry and heather scrub was *Lycopodium clavatum* and *Diphasiastrum alpinum*. *Huperzia selago* was by the stream and *Dryopteris* × *deweveri* and its parents were in a small marsh. *Asplenium viride* was in a wheel pit, its only location in Cardiganshire.

Half a mile west we stopped opposite the ruins of a former miners' barracks and walked down the slope to another abandoned wheel pit containing numerous species of fern. Of particular interest was a magnificent specimen of *Polystichum* × *bicknellii* with both parents nearby.

To conclude a superb day of ferning we enjoyed an excellent dinner at the Wynnstay Hotel in Machynlleth.

On Sunday we started with a visit to the NNR at Cors Fochno near Borth (22/6392 to 6391). At a nearby lay-by we met the reserve manager, Mike Bailey, who was to lead us for this part of the visit. The access drive had a wet ditch to one side where several large *Osmunda regalis* were flourishing – the first of many we were to see. Mike gave us an introduction to the site's

ecology and history. The peat in it was formed over the last 5,000 years or so and, although some peat cutting and peripheral drainage had been carried out, the centre was essentially untouched and was now being maintained by blocking old drainage channels. Mike then led us into the undergrowth to a moth trap he had set the night before, and impressed us with his knowledge as he identified the wonderful variety of moths in it. On the way to the trap we passed a huge *Osmunda*, a few *Athyrium filix-femina* and numerous *Dryopteris dilatata* and *D. carthusiana*, which lead to a search for *D.* × *deweveri*. Typical fronds of these three *Dryopteris* were found, which enabled Clive Jermy to provide an illustrated tutorial on their identification.

photo B.D. Smith

Cors Fochno, Ceredigion, mid-Wales

Sue Dockerill & Roger Norman look on as Clive Jermy expounds on *Dryopteris*

From the car park at the end of the access drive we walked along the board-walk into the bog proper. In drier patches *Pteridium aquilinum* was common and where the walk passed through small thickets, *Dryopteris dilatata* and *D. carthusiana* were again seen. At the bouncy centre of the bog there were several interesting plants typical of this type of substrate, including several rare *Sphagnum* mosses and the sundews *Drosera rotundifolia* and *D. anglica*, but no ferns. On the way back to the cars we were also to see the third British species, *Drosera intermedia*, in boggy scrapes by the path.

After lunch, under the expert leadership of Arthur Chater and Clive Jermy we explored the nearby Cwm Einion, a very different habitat with a steep, wooded valley above a rocky and precipitous mountain stream (22/6994). Within a few yards of the lay-by where we parked we saw *Dryopteris dilatata*, *D. affinis*, *D. borreri*, *Oreopteris limbosperma*, *Blechnum spicant*, *Athyrium filix-femina* and *Pteridium aquilinum*, and this mix was to be our constant companion in this area. Initially we headed down through the tall larch trees towards a waterfall. On the way a few small plants of *Polypodium vulgare* were seen and around and under a large rock we found *Hymenophyllum tunbrigense*. Closer to the waterfall several plants of *Dryopteris aemula* were admired. After exploring this area, we followed the road up through the woods and found a large patch of *Phegopteris connectilis* by the roadside and a single huge *Asplenium scolopendrium*. Despite searching, we did not find the *Hymenophyllum wilsonii* found on previous visits to this area.

The day ended on a high note with a visit to Joy and Stuart Neal's garden near Eglwysfach (22/6996). A lovely garden where a fantastic setting and abundant native flora are enhanced by a fascinating range of more exotic ferns including new plantings where an old conifer had fallen. While some areas of the garden are more formal, its relaxed feel is typified by a shaded rocky outcrop where wild plants of *Dryopteris affinis* are supplemented by swags of *Adiantum venustum* introduced into nearby cracks. The group was pleased to find that the gametophyte of *Trichomanes speciosum*, found on a previous visit, was still thriving and torches were retrieved to admire it. After a full and very enjoyable day this was a lovely spot to relax with a cup of tea and a slice of home-made cake. We are very grateful to Joy for suggesting and supporting such a varied weekend and making us so welcome.

Wye Valley – Thursday 10 September — Brian Dockerill

Twenty of us met at the Doward Car Park, approximately five miles north-east of Monmouth (32/547156). We were very fortunate to have as our leader George Peterken, a foremost woodland ecologist and author of the recently published book in the New Naturalist series: *The Wye Valley*. The objective of the day was to learn more about the geology and ecology of the Wye Gorge and to study the ferns therein.

After an introduction we proceeded to King Arthur's Cave, the site of detailed archaeological studies that have revealed considerable information on the history and prehistory of the valley. Around the cave were found *Polypodium* (presumed *P. interjectum*), and *Asplenium trichomanes* subsp. *quadrivalens*. Some of the latter had a little attractive scalloping of the pinnules but none were regarded as candidates for subsp. *pachyrachis*. We then clambered onto the top of one of the Seven Sisters rocks, seeing *A. scolopendrium*, *Dryopteris borreri*, *D. dilatata*, *D. filix-mas* and *Pteridium aquilinum* on the way. Although devoid of ferns, the top ledges of the rocks are of great botanical interest as, never having been shaded by trees or greatly grazed, they support a number of relict species. From the excellent viewpoint provided by the rock pinnacle we had a good overview of the shaded southern side of the gorge, which was our objective for the afternoon. First though we descended to river level to visit the Dropping Wells, a cliff where highly alkaline water spilling over from a marsh above has created considerable deposits of tufa on which were found both *Asplenium trichomanes* subsp. *quadrivalens* and subsp. *pachyrachis*. As well as several of the ferns seen previously we saw the first *Polystichum aculeatum* of the day.

After lunch in the sunshine we ventured onto the suspension bridge and crossed the river into quite a different moist shaded environment under the north-facing cliffs. This is the location of the non-intervention Lady Park Wood. George explained that studies here have greatly improved the understanding of woodland evolution, playing a part in replacing the previous concept of a linear development to a so called climax community by a model based on the repeated impact of major events followed by subsequent recovery. He illustrated this with the effects of the 1976 drought, the 1987 storm, Dutch elm disease and changes in deer populations.

The *Asplenium scolopendrium* were particularly lush on this side as were the many large *Polystichum setiferum* amongst which were some *P. aculeatum*, and a sample of a possible hybrid was taken for further study. On the main riverside path were also seen large *Dryopteris affinis* and a very attractive lacerate *Polypodium interjectum*. Cliffs on a side path away from the river were found to have many more *A. trichomanes* subsp. *quadrivalens* with more subsp. *pachyrachis* among them. On a previous visit *Gymnocarpium robertianum* had been found nearby on the path to Symonds Yat and we set off to try to rediscover it. On the way we were surprised to see several extensive stands of *Blechnum spicant*; presumably these signified some area of acid soil among the predominant limestone. As we climbed ever higher out of the gorge we found *Asplenium adiantum-nigrum* by the path side but still no limestone oak fern. Having gone so far, the viewpoint café on the top of the cliff proved irresistible and we were rewarded, not just by the refreshment and the tremendous views, but by the sight of *Gymnocarpium robertianum* on the return walk. Whether this discovery was thanks to the direction of travel or the recuperative effects of a cup of tea remains uncertain!

Despite our tiredness after finally climbing back up to the car park, the group had enjoyed this second meeting, thanks in great part to George Peterken's leadership.

Fibrex Nursery *Polypodium* Day – Wednesday 28 October — Brian Dockerill

For our third meeting, Regional Group member Angela Tandy welcomed us to her nursery, Fibrex, near Pebworth. Nineteen members attended, and activities included a tour of the fern collections at the nursery and an excellent overview of *Polypodium* cultivars by Martin Rickard using stock plants to illustrate their distinguishing features. A fine end to our inaugural year.

HORTICULTURAL SHOWS

RHS TATTON PARK FLOWER SHOW – 21-26 July

Yvonne Golding

The BPS made an appearance at the RHS Tatton Park Flower Show in 2009 for the first time. We took a van load of ferns from our gardens and some that Yvonne had been looking after at The Firs (University of Manchester Experimental Grounds). Roland Ennos drove the large Luton van and the stand was set up by Roger Golding, Yvonne Golding and Michael Hayward. Roger produced very attractive hand-written labels for the ferns and Michael made up spore packets and printed leaflets. Roland cooked us many sustaining meals and had an interesting time being hauled out of the mud on the showground on Sunday. During the week the team of 20 BPS members each took a turn in manning the stand and talking to the public. The stand was a simple arrangement of ferns grown in pots, enhanced by a pair of Coalbrookdale fern chairs and plant stands, the whole effect being that of a Victorian conservatory. We were able to enhance our stand with two new BPS posters and gave away many new promotional leaflets. The judges liked it and awarded us a Silver Flora Medal plus £190 prize money.

photo: J. Watson

BPS stand, Tatton Park Flower Show 2009

Michael Hayward, Yvonne Golding (with Silver Medal certificate) & Roger Golding

In all we exhibited about 60 ferns, which were a mixture of British natives: *Cryptogramma crispa*, *Cystopteris fragilis* and *Gymnocarpium dryopteris*, with two pretty horsetails – *Equisetum pratense* and *E.* × *mildeanum* (challenging to distinguish!), together with a range of British hardy cultivars, foreign hardy species and cultivars, and greenhouse species and cultivars. Many were admired but maybe the stars of the show were Yvonne's platyceriums and tiny *Ophioglossum petiolatum*, Michael's *Polystichum setiferum* 'Green Lace' and an especially fine *Dryopteris erythrosora*, and Roger's *Adiantum reniforme*.

We formed good relationships with the main fern sellers at the show. We purchased so many ferns from Bentley Plants that the owner, John Wilson, joined our Society! As usual, Fibrex Nurseries had a good range of ferns on display with their prize-winning begonias, including *Davallia* (formerly *Humata*) *tyermanii* and *Dryopteris crassirhizoma*. Ken Green from The Walled Garden, Hornby, who joined our Society at Southport Flower Show last

year, displayed some nice ferns, including *Osmunda japonica* and a fine *Cyathea cooperi*, in amongst flowers and hostas. The main fern attraction (apart from our BPS stand!) was once again that put on by Gold Medal winners Fernatix. The specimens were beautifully spaced so as to see the full form of the plants. My favourites were *Polystichum vestitum*, a very fine multi-trunked *Blechnum gibbum* and that fantasy tree fern *Cyathea tomentosissima*. Kerry and Steven from Fernatix, who are very talented fern-growers and exhibitors, have yet to re-join our Society but we are working on it!

photo: A.J. Evans

BPS stand, Tatton Park Flower Show 2009

Yvonne Golding & Michael Hayward

The aim of our stand was to show the public the huge range of ferns that can be grown in pots in different situations. We attracted 15 new members and were able to share our enthusiasm about ferns with a lot of visitors. Many learnt how to grow ferns from spore and took away over 100 packets of spores to try for themselves. A good range of merchandise was sold, together with about 100 copies of *Pteridologist*. We hope that after reading our excellent journal others will want to join our Society. See the BPS website for more photographs and further information about the Show.

SOUTHPORT FLOWER SHOW – 20-23 August — Michael Hayward

At the Southport Flower Show we never know in advance what type of site we will be allocated for our stand and this year we found ourselves pushed into a corner of the marquee, never the best location for attracting visitors. As an experiment I had cut some large *Dicksonia antarctica* fronds that we were able to display along the end wall of the marquee. These attracted a considerable number of comments and made up for our poor position. Our background display this year was of photographs of the newly restored fernery in the Southport Botanic Gardens at Churchtown, well worth a visit by any members passing through the area. Many small ferns in pots were used to decorate the stand and the usual displays of spore sowing and fern propagation given. Further information and photographs can be seen on the BPS website.

The weather was mixed but a great improvement on the RHS Tatton Show. New frame-based tents were in use for the first time – a considerable improvement on the previous pole-based marquee, being virtually leak-proof and giving much better protection from adverse weather.

The numbers of members and others entering the competitive displays of ferns continues to increase and I was particularly pleased that Robert Sykes was able to bring some of his excellent ferns this year. There were some splendid specimens on display, though some ferns were a little battered after being used at Tatton. Yvonne Golding made a superhuman

effort, entering every class available, and deservedly won the Happiland Trophy. The BPS cup for the Individual Championship was again won by Brian Russ who always produces a well balanced display of consistently high standard.

This year's winners of the competitive classes were:

Class 8 Individual Championship. Four hardy British Ferns (dissimilar), two Greenhouse Ferns (dissimilar) and two Foreign Ferns Hardy in Great Britain: 1st B. Russ, 2nd R. Sykes, 3rd Y. Golding (4 entries)

Class 9 Three Hardy British Ferns (distinct species, not varieties): 1st Y. Golding (2 entries)

Class 10 One Foreign Fern Hardy in Great Britain: 1st R. Sykes, 2nd Y. Golding, 3rd B. Russ (6 entries)

Class 11 Three *Polypodium* (3 distinct varieties): 1st Y. Golding (1 entry)

Class 12 Three *Polystichum* (3 distinct varieties): 1st R. Sykes, 2nd Y. Golding (2 entries)

Class 13 Three *Athyrium* (3 distinct varieties): 1st Y. Golding (1 entry)

Class 14 Three *Asplenium* excluding *A. scolopendrium* (3 distinct varieties or species): 1st Y. Golding (1 entry)

Class 15 One British Fern (any genus or variety): 1st Y. Golding, 2nd O. Fairclough (4 entries)

Class 16 One Greenhouse Fern: 1st P. Stewart, 2nd H.J. Abbott, 3rd Y. Golding (7 entries)

Class 17 Three *Asplenium scolopendrium* (3 distinct varieties): 1st Y. Golding, 2nd B. Russ (2 entries)

My thanks go to Ruth Berry Piearce, Robert Crawford, Roland Ennos, Ann Gill, Yvonne Golding, Joan Hindle, Trevor Piearce and Harvey Shepherd for manning the stand this year. We are always looking for new volunteers to help on the stand. Members travelling a distance are particularly welcome and sleep-overs can be arranged as necessary. The dates for next year's show are 19-22 August 2010.

photo: R. Ennos

BPS stand, Southport Flower Show 2009

Harvey Shepherd, Yvonne Golding (with Happiland Trophy) & Michael Hayward

SECRETARIAL NOTES

Please note: *names and contact details of all officers can be found on the inside of the front cover of this* Bulletin.

ANNUAL GENERAL MEETING 2010 – The 107th AGM will take place on Saturday 10th April 2010 at The Natural History Museum, London at 2p.m.

SUBSCRIPTIONS 2010 – Members are reminded that subscriptions were due on 1st January and should be paid to the Membership Secretary. Cheques should be made payable to 'The British Pteridological Society'. Current rates are given inside the front cover of this issue. Payment can be made by **Credit Card** or **PayPal**. The latter was introduced last year and is quicker, cheaper and easier to manage than Credit Cards. Instructions for both are given on the renewal form. **Standing Order** forms are printed on the reverse of renewal forms and are also available from the Membership Secretary and the BPS website. Standing Orders may be paid on 1st January or 1st February. In either case, membership is deemed to be from 1st January to 31st December.

Members are reminded that according to Clause 11 of the Constitution "Any member whose subscription is unpaid within six calendar months of it becoming due shall be liable to have his/her name removed from the list of members of the Society". Defaulting members who do not amend their Standing Orders with their bank and are still paying at the old rate shall be notified that they will not receive the *Fern Gazette* until such time as their Standing Orders are updated. Members still paying even earlier rates shall be notified that their name will be removed from the Membership List until such times as Standing Orders are updated or cancelled. Any monies received from old Standing Orders will be treated as a donation.

GIFT AID – Since 2003 the BPS has been a registered charity. This enables us to claim back from the Inland Revenue 20p for every pound paid in the annual subscription for each member who authorises us to do so. In 2009 we were able to claim for 155 members, which brought in £891. While this is obviously an extremely valuable addition to the Society's annual income, it could be considerably more. There are probably a further 200 members or so on whose subscriptions the Society could claim Gift Aid if these members authorised it and this could lead to perhaps another £1,000 per annum. All that is required is a minimal amount of form filling (about one minute) and a second class stamp. **Even better, the form has only to be filled in once.** The forms are retained by the Gift Aid Secretary and the same ones used year after year to make the claim.

The small number of provisos is set out below:

1. Gift Aid is available only to members who reside in the UK.
2. Members on whose subscription Gift Aid is claimed must be paying income tax or capital gains tax at least equal to the amount claimed.
3. Members whose subscriptions are allowed as an expense in connection with their employment may not claim Gift Aid.

If the Inland Revenue allows us to claim relief on your membership subscription please authorise us to do so. It's the equivalent of a yearly £4 donation to the Society.

DIRECT DEBIT – The Society does not offer a Direct Debit facility for subscriptions. The reasons are two-fold. Expensive software is required to create a direct debit tape to send to the bank and is too expensive for a small Society like the BPS. With Standing Orders the bank does all the administration, whereas with Direct Debits a considerable additional workload would fall on the Society, in particular the Treasurer, and it is necessary to bear in mind that all officers offer their time and services on a voluntary basis.

PUBLICATIONS BY AIRMAIL – Our journals can be sent by airmail to overseas members, provided that they advise the Membership Secretary and pay an additional subscription to cover airmail postage. See inside front cover for rates.

E-MAIL ADDRESSES – These are published in the Membership List "for members who have a relatively stable e-mail address and who keep up-to-date with their messages". A supplementary list and amendments are published in the *Bulletin*. Members who wish to have their e-mail address added, changed or removed are requested to inform the Membership Secretary by e-mail.

NOTIFYING CHANGES OF ADDRESS – Please inform the Membership Secretary of changes of address and telephone number. He is responsible for notifying any other officers and appointees who need to know.

E-BPS DIARY SYSTEM – On our website there is an eBPS Diary System, enabling us to see all the Society's events on one calendar. With meetings happening all over the country it is only too easy for events to overlap; we hope the diary system is helping to alleviate this and proving to be a useful planner for members. The system relies on regular updates so please send details of your BPS events to the Committee Secretary, Graham Ackers.

CODES OF SAFETY, CONDUCT AND DECLARATION FORM – All members attending Society field meetings should be aware of the Society's *Safety Code* (see 2000 *Bulletin* 5(5): 275), as well as the *Code of Conduct for the Conservation and Enjoyment of Wild Plants* (see 1999 *Bulletin* 5(4): 199), and are required to sign a Declaration form. Copies of these documents can be obtained from the Meetings Secretary or BPS website.

GREENFIELD FUND – This fund, set up as a memorial to one of our Society's great fern growers, Percy Greenfield, is used to finance approved projects, helping with the cost of necessary equipment, books and travel expenses. Percy Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would have wanted this taken into consideration when decisions are made. Workers eligible for university or college grants and similar support are not therefore eligible for help from the fund. Anyone wishing to apply for this funding should contact the General Secretary for further information.

CENTENARY FUND – This fund is used to promote the study of all aspects of pteridophytes – horticultural, scientific and educational, whether by amateurs, students or professional pteridologists. As such its scope is much broader and more flexible than the Greenfield Fund. Anyone wishing to apply for this funding should contact the General Secretary for further information.

THE J.W. DYCE AWARD – This award was set up in 2007 to honour the memory of Jimmy Dyce who was a member from 1935 until his death in 1996. The third J.W. Dyce award will be made at the AGM 2010 to the author(s) of the best paper, article, book or other substantial piece of work published during 2009 in any of the three BPS journals, on the BPS website or as a special publication. The award, which is a cash prize of £100, is open to everyone, whether professional or amateur pteridologist, horticulturalist or fern enthusiast.

MEMBERS' INFORMATION SERVICE – Members often require information and advice on many aspects of pteridophytes but are reluctant to ask or simply do not know where to obtain help. Queries from members on the identification or cultivation of ferns should be sent, with three first class stamps, to the Horticultural Information Adviser.

BACK NUMBERS OF JOURNALS – We have a large number of back issues of our journals and it is a shame that more members of the Society do not avail themselves of them. Those that do frequently tell me they wished they had done so long ago as they contain a wealth of fern material. They can be obtained from the Back Numbers Organiser Pat Acock who will gladly lighten his loft. You can have a sample pack for £6 including postage.

FOREIGN FERN SOCIETY JOURNALS HELD BY THE SOCIETY – The Society exchanges journals with a number of other fern societies. We have a collection from societies in America, Australia, India and the Netherlands. If members would like to browse these please contact Tim Pyner (t.pyner@btinternet.com) who now holds the stock.

READING CIRCLE – The Society operates a reading circle for the *American Fern Journal*, a quarterly publication containing much information for those seriously interested in ferns. The *Fiddlehead Forum*, which publishes many 'ferny' items of interest to the amateur grower, accompanies it. To receive these journals contact Tim Pyner (t.pyner@btinternet.com).

BPS WEBSITE – **www.eBPS.org.uk** (hosted by The Natural History Museum.) In today's internet-oriented world, it is increasingly important for the Society to see its website as a major means of communication. The website provides information for the membership, but it is also, and perhaps more importantly, a 'shop window' to present the Society and pteridology to the wider world. Our aim is to make our website the premier source on the internet of information about pteridophytes and pteridology. In addition to further enhancements to the website, this year we have launched a new public bulletin board or 'forum' for the discussion of all aspects of ferns and other pteridophytes – **www.fernforum.net/bb**. We have set up a system of 'content providers' for specific areas of the website, which will hopefully improve the quantity of good quality information. Members with views on what the website should provide and with offers to help with content should contact the Website Editor, Anthony Pigott. Good digital photographs of members involved in fern-related activities are particularly welcome as are suggestions or contributions for wild sites, gardens and nurseries for 'Where to See Ferns'.

AMERICAN FERN SOCIETY – The AFS has had a reciprocal payment arrangement with the BPS for many years through their respective Membership Secretaries. See AFS advert on p. 182.

BRITISH WILDLIFE – Concessionary individual subscriptions to *British Wildlife* magazine are available to BPS members: www.britishwildlife.com. This excellent journal occasionally carries articles on ferns and reviews fern publications. See the excellent review of James Merryweather's AIDGAP identification Key and CD in BW 20(1) October 2008.

ROYAL HORTICULTURAL SOCIETY – Our Society is affiliated to the RHS. This enables a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services. Some RHS Journals are available free to members at indoor meetings. Further information is available from the Treasurer.

PAYMENT OF EXPENSES – The Treasurer has *Rules for Seeking Reimbursement of Personal Travelling and Administrative Expenses* by Officers and Members acting on behalf of the Society. Forms for claiming these expenses can be obtained from the Treasurer by phone or e-mail request.

COPYRIGHT – All contributors to the BPS journals and website are required to sign an agreement assigning ownership of copyright of the article, photograph etc. to the BPS. This has the aim of safeguarding the contributors' work from unlawful copying and use. It does not stop contributors from using their own work elsewhere provided that they acknowledge the original source of publication.

MERCHANDISE – Have you bought a BPS sweatshirt, polo shirt or fleece yet? These are all dark green with a small embroidered BPS logo in yellow. Other items, such as BPS ties, metal badges, ferny greetings cards, bookmarks, pens, calendars and mugs, are also for sale. Can't find your order form? Contact the Merchandise Organisers or look on the website for details. The Organisers also welcome suggestions for new stock.

BOOKSALES – It has become more difficult to find second-hand fern books at reasonable prices so if you are thinking of selling any of your books please consider first offering them to the Society. Frank would also be pleased to receive any donated or bequeathed books that could then be offered to members at affordable prices. Contact him by e-mail if possible.

NURSERY ADVERTISEMENTS – Members with nurseries that offer ferns are reminded that they may place an advertisement in the *Bulletin*, *Pteridologist* and on the website, free of charge in return for the inclusion of a note about the Society in their catalogues. The Website Editor can include an image if required. If members wish their nursery to be included, please contact the General Secretary.

PUBLICITY AND MARKETING OFFICER – The Committee would like to establish a new post of Publicity and Marketing Officer. If you would like to help co-ordinate and hopefully expand our activities in this area then we would like to hear from you. Please contact the Committee Secretary for more information.

EDUCATION SUBCOMMITTEE – An education subcommittee has been formed, led by Alison Evans and supported by Yvonne Golding, Bridget Laue, Frank McGavigan and Heather McHaffie. We would be very pleased to hear your views on how we can develop the educational role of the BPS, or to have information about any fern-related educational initiatives or resources that you have found useful.

SPORE EXCHANGE – Matt Busby is now the Spore Exchange Officer. Each year the spore list is published on our website.

NEW REGIONAL GROUP – A new group was formed in November 2009 to cover areas of Greater Manchester, Cheshire, Derbyshire and Staffordshire. The group is to be called Manchester and North Midlands and will initially be led by Yvonne Golding. The programme for 2010 is on our website but if you would like more information then please get in touch. All BPS members are welcome to join any of our excursions.

DESTINATION OF PTERIDOPHYTE RECORDS – Members are reminded that records of ferns, horsetails, clubmosses and quillworts in the wild should be sent in the first instance to the BPS Recorder, Fred Rumsey, who will forward them to the BSBI. These records are stored centrally at the Biological Records Centre, and can be accessed by the BPS. Members may also like to contact the appropriate Botanical Society of the British Isles (BSBI) Vice-county recorders, whose addresses are available from the BSBI website or BSBI yearbook, which is available to BSBI members. For those without access to the Internet or yearbook please contact the BPS Recorder for details.

FORTHCOMING EVENTS (SHOWS, FERN COURSES & SYMPOSIA):

GARDENERS' WORLD LIVE SHOW, NEC. 16th-20th June 2010 – Following on from the success at RHS Tatton Park Flower Show last year, our Society will be represented at this show held at NEC Birmingham. Please come along and visit us in The National Plant Societies Marquee. If you have any well grown specimen ferns in pots that you would consider loaning for display at this event, or if you would like to help in anyway then please contact Bryan and Gill Smith.

SOUTHPORT FLOWER SHOW. 19th-22nd August 2010 – Why not spend a few hours or a day helping to look after the Society's stand? You do not need to be an expert on ferns or fern growing, just prepared to spend a few hours or a day with us. Expenses are available, as well as free entry to the Show. If you grow ferns why not consider entering your best specimens; Southport is one of the few shows with amateur classes for ferns. Details are available from Michael Hayward, 6 Far Moss Road, Blundellsands, Liverpool L23 8TQ. mhaywardL23@blueyonder.co.uk.

ROYAL BOTANIC GARDEN EDINBURGH. 19th June 2010 – Fern Identification: a 1-day course. Tutor: Heather McHaffie. £45. To book, contact RBGE education office 0131-248-2937 or e-mail education@rbge.org.uk.

FSC KINDROGAN FIELD CENTRE. 2nd-5th July 2010 – Fern Identification: a 3-day residential course. Tutor: Heather McHaffie. £175. To book, contact the Field Studies Council on 01250-870-150 or e-mail admin.kd@field-studies-council.org.uk.

FERN WORKSHOP IN HAWAII. 13th-23rd September 2010 – Tutor: Alan Smith. For more information or to book contact Heather Driscoll, Field Coordinator at University of California, 1001 Valley Life Sciences. #2465. Berkeley, CA 94720; hdriscoll@berkeley.edu or tel. 510-642-2465.

INDIAN FERN SOCIETY. INTERNATIONAL SYMPOSIUM ON FERNS AND FERN ALLIES. 10th-12th November 2010 – Palampur, Himachal Pradesh, India. E-mail the BPS General Secretary for a circular.

ANNUAL GENERAL MEETING 2009

MINUTES of the 106th Annual General Meeting of the British Pteridological Society held on Saturday 4th April 2009 at Manchester Museum at 1400 hrs.

[**Preamble.** These minutes are shorter than those of previous years as a result of all of the Officers' and Committee Appointees' Reports for 2008 being published in the *Bulletin* for 2008 in advance of this AGM. Robert Sykes, Yvonne Golding, Gill Smith and Alison Paul have reviewed these minutes, for which approval will be sought at the next AGM on 10 April 2010.]

IN THE CHAIR: The President, Mr Robert Sykes.

PRESENT: Graham Ackers, Pat Acock, Tony Braithwaite, Piet Bremer, Clive Brotherton, Bruce Brown, A.R. (Matt) Busby, Jonathan Crowe, John Edgington, Roland Ennos, Alison Evans, Liz Evans, Mary Gibby, Ann Gill, Roger Golding, Yvonne Golding, Alec Greening, John Grue, Frances Haigh, Eleanor & Nick Hards, Michael Hayward, Joan Hindle, Jennifer Ide, Frank Katzer, Elise Knox-Thomas, Bridget Laue, Howard Matthews, Malcolm Merritt, Alan Ogden, Alison Paul, Mike Porter, Tim Pyner, Martin Rickard, Paul Ripley, Paul Sharp, Bryan & Gill Smith, Matt Stribley, Robert Sykes, Barry Thomas, Melville Thomson, Ken Trewren, Alastair Wardlaw, Joan Watson, Joan & John Woodhams, Anne & Barry Wright.

Item 1 – APOLOGIES FOR ABSENCE: Mike Canaway, Brian Dockerill, Adrian Dyer, Sylvia Martinelli, Frank McGavigan, Karen & Steve Munyard, Paul Ruston, Alistair & Margaret Urquhart, Sarah Whittingham.

Item 2 – APPROVAL OF THE MINUTES: Minutes of the 105th Annual General Meeting of the British Pteridological Society held on Saturday 5th April 2008 and published in the *Bulletin* (Vol. 7, No. 1) were approved and signed by the Chairman.

Item 3 – MATTERS ARISING: There were none.

Item 4a – VACANT POSTS. The President was pleased to announce that A.R. (Matt) Busby had taken over as Spore Exchange Organiser from the Wrights, but that this was only on a temporary basis, and a permanent person or team was still needed. The newly created and important posts of Publicity and Marketing Officer and Education Officer now required filling.

Item 4b – REPORT OF THE GENERAL SECRETARY: This report, which was published in the *Bulletin* (Vol. 7, No. 1) was read out by its author Yvonne Golding.

Item 4c – REPORT OF THE TREASURER: The Society's accounts for 2008 had been published in the *Bulletin* (Vol. 7, No. 1), and coloured versions were made available at the meeting. In presenting the accounts, the Treasurer Gill Smith drew attention to the following:

- The Society's current (working) bank account is with the Bank of Scotland.
- The effects of reducing interest rates were very noticeable in the BoS account; significant capital had been put on deposit with COIF (Charitable Organisations Investment Fund) and this was achieving higher interest rates than could be found elsewhere.
- The Society had been approached by the Publishers Licensing Society, as a result of which the BPS is in receipt of royalties for photocopies of BPS publications.
- The benefits from Gift Aid had not been realised in 2008 as the Inland Revenue had lost the claim form; this income will appear in the accounts for 2009.
- The Treasurer asked members if they thought that pie charts helped in the presentation of Accounts; those present agreed that this was a useful feature.
- The Independent Examiners were thanked for their work.

The accounts were accepted, with thanks to the Treasurer.

Item 5 – QUESTIONS ON OFFICERS' REPORTS

Membership Secretary. Although a drop in subscriptions was reported for 2008, Gill Smith was able to report signs of an increase for 2009.

Fern Gazette. The next issue was due at the end of May 2009. Mary Gibby would welcome feedback on the publication of checklists. Martin Rickard thought this was an excellent idea, and Alison Paul pointed out that these were not generally published in other journals.

Pteridologist. Barry Thomas questioned the funds available for this publication. As a result of Alec Greening requesting tenders from printers, although larger, the 2008 edition had been produced more cheaply than for 2007. Whether this tender approach could be used for the other two journals was a balance between the benefits of building a relationship with a printer and achieving cost savings.

Website. Graham Ackers reported on the instigation of a Content Provider system to spread the load of website content creation; details would appear on the website. A web forum had also been set up in prototype, and would be made generally available if successful.

Projects. Yvonne Golding reported that Anthony Pigott had just launched the BPS Photographic Recording Project on the website. Originally Chris Page's idea, this involves taking repeat photographs of fern sites over say a five year period. Members were encouraged to take part in this project.

Jennifer Ide suggested that the Society might consider on-line publishing, as practised by some other societies. The President pointed out that the committee was open to ideas, and would consider this further.

Item 6 – QUESTIONS ON COMMITTEE APPOINTEES' REPORTS

Plant Exchange. Ken Trewren expressed surprise that there were so few participants.

Merchandise. Bryan Smith would welcome fern photographs from members for the 2010 BPS calendar.

Archive. The room in the Manchester Museum intended to house our archives had been viewed by some during the lunchtime tour.

Miscellaneous. Jennifer Ide congratulated the officers on producing their reports in time for publication in the 2008 *Bulletin*. As a result of this, there was no necessity to present most reports at the AGM, and the President ascertained that the members present were happy with this format.

Item 7 – ELECTION OF OFFICERS AND COMMITTEE AND APPOINTMENT OF INDEPENDENT EXAMINERS

President-elect. Prof. Mary Gibby had been nominated and was elected unanimously.

Vice-Presidents. Nominations had been received for Mr Patrick Acock and Miss Jennifer Ide, and they were elected unanimously.

Officers. All of the Officers were available for re-election. This was proposed by Barry Thomas, seconded by Jennifer Ide, and they were unanimously re-elected en bloc. [General Secretary Dr Yvonne Golding, Committee Secretary Mr Graham Ackers, Treasurer Mrs Gillian Smith, Membership Secretary Mr Mike Taylor, Meetings Secretary Mr Rob Cooke, Conservation Officers Dr Heather McHaffie and Dr Fred Rumsey, Project Officer Mr Anthony Pigott, Publications Secretary Mr Martin Rickard, *Fern Gazette* Editor Prof. Mary Gibby, *Pteridologist* Editor Mr Martin Rickard, *Bulletin* Editor Miss Alison Paul, Website Editor Mr Anthony Pigott.]

Elected Committee Members. All ten were available for re-election. This was proposed by Alan Ogden, seconded by Mike Porter, and they were unanimously elected en bloc. [Prof. John Edgington, Mr Roger Golding, Mr Alec Greening, Dr Michael Hayward, Dr Bridget Laue, Dr Sylvia Martinelli, Mr Howard Matthews, Mr Paul Ripley, Mr Bryan Smith & Mr Matt Stribley.]

Independent Examiners. Dr Nick Hards and Mr Alex Storie had agreed to continue in this capacity.

Item 8 – AWARDS

Honorary Membership. The committee had proposed Barry Thomas and John Woodhams for honorary membership. In thanking the Society for this benefit, both gave brief accounts of their long associations with the Society. [*See citations p. 183.*]

Outstanding Contribution Awards. Two presentations were made. Barry and Anne Wright had provided a vital service in expertly running the Spore Exchange for ten years. Alastair Wardlaw as a past President had effectively resolved several issues at that time, and had run the Tree Fern Special Interest Group. Both parties gave their thanks.

J.W. Dyce Award for the best published article in 2008. This was presented in their absence to Fred Rumsey and Helena Crouch for their *Pteridologist* article 'Brake out! *Pteris* go wild in the British Isles'.

photo: Y.C. Golding

Barry & Anne Wright receive their Outstanding Service Award, AGM 2009

Item 9 – ANY OTHER BUSINESS

The National Trust for Scotland was proposing to close Arduaine Garden on the basis that it does not make money, and the President had written to them to try and avert this closure. He asked and was granted authority from the meeting to write a further letter on behalf of the Society. However, Mary Gibby pointed out that the National Trust for Scotland was currently experiencing considerable financial difficulties resulting in staff redundancies.

Robert Sykes closed the meeting at 15.10.

Graham Ackers
Committee Secretary

photo: Y.C. Golding

Alastair Wardlaw receives his Outstanding Service Award from Robert Sykes, AGM 2009

BPS ACCOUNTS FOR 2009

	2008	2009
ORDINARY ACCOUNT		
INCOME		
Subscriptions	£13,937.58	£12,632.97
Interest (*see note 11*)	£1,773.82	£329.74
Booksales	£765.00	£6,293.50
Merchandise	£864.03	£1,033.45
Inland Revenue Gift Aid (*see note 8*)	£0.00	£1,935.67
Publishers Licensing Society	£440.01	£200.46
Donations (*see note 12*)	£96.00	£690.00
Other	£277.93	£39.50
TOTAL INCOME	**£18,154.37**	**£23,155.29**
EXPENDITURE		
Pteridologist	£3,360.30	£5,075.96
Fern Gazette	£4,362.03	£1,948.98
Bulletin	£3,778.00	£4,395.77
Printing & Stationery	£169.00	£309.81
Administration & Postage	£405.40	£554.42
Subscriptions to Societies	£36.00	£96.00
Plant & Spore Exchanges	£12.00	£43.00
Meetings	£44.79	£147.37
Merchandise	£1,296.54	£345.23
Trustees' Expenses	£1,025.54	£1,271.01
Archive Storage	£452.56	£517.98
Booksales	£7,355.97	£1,864.63
Special Awards	£339.93	£100.00
Autumn Mailing	£540.17	£551.59
Credit Card Costs	£73.86	£94.76
Computer Leasing	£727.24	£642.48
Promotion & Advertising	n/a	£1,120.93
Donation to Benmore Fernery	n/a	£2,500.00
Other	£166.80	£0.00
TOTAL EXPENDITURE	**£24,146.13**	**£21,579.92**
Balance (income minus expenditure)	**–£5,991.76**	**£1,575.37**
Brought Forward from previous year	**£39,297.26**	**£33,305.50**
Total in Ordinary Account	**£33,305.50**	**£34,880.87**
CENTENARY FUND (Restricted Account)		
Interest	£334.34	£71.70
Interest brought forward from previous year	£1,823.34	£1,657.68
Grant	£500.00	£0.00
Total Interest	**£1,657.68**	**£1,729.38**
Capital brought forward from previous year	£5,583.73	£5,583.73
Total in Centenary Fund	**£7,241.41**	**£7,313.11**

GREENFIELD FUND (Restricted Account)

Interest	£117.51	£26.94
Interest brought forward from previous year	£1,552.27	£1,669.78
Grant	£0.00	£0.00
Total Interest	**£1,669.78**	**£1,696.72**
Capital brought forward from previous year	£1,051.00	£1,051.00
Total in Greenfield Fund	**£2,720.78**	**£2,747.72**

PUBLICATIONS ACCOUNT

Brought forward from previous year	£8,750.83	£10,086.92
Income	£941.09	£774.17
Interest	£395.00	£99.87
Expenditure	£0.00	£0.00
Total in Publications Account	**£10,086.92**	**£10,960.96**

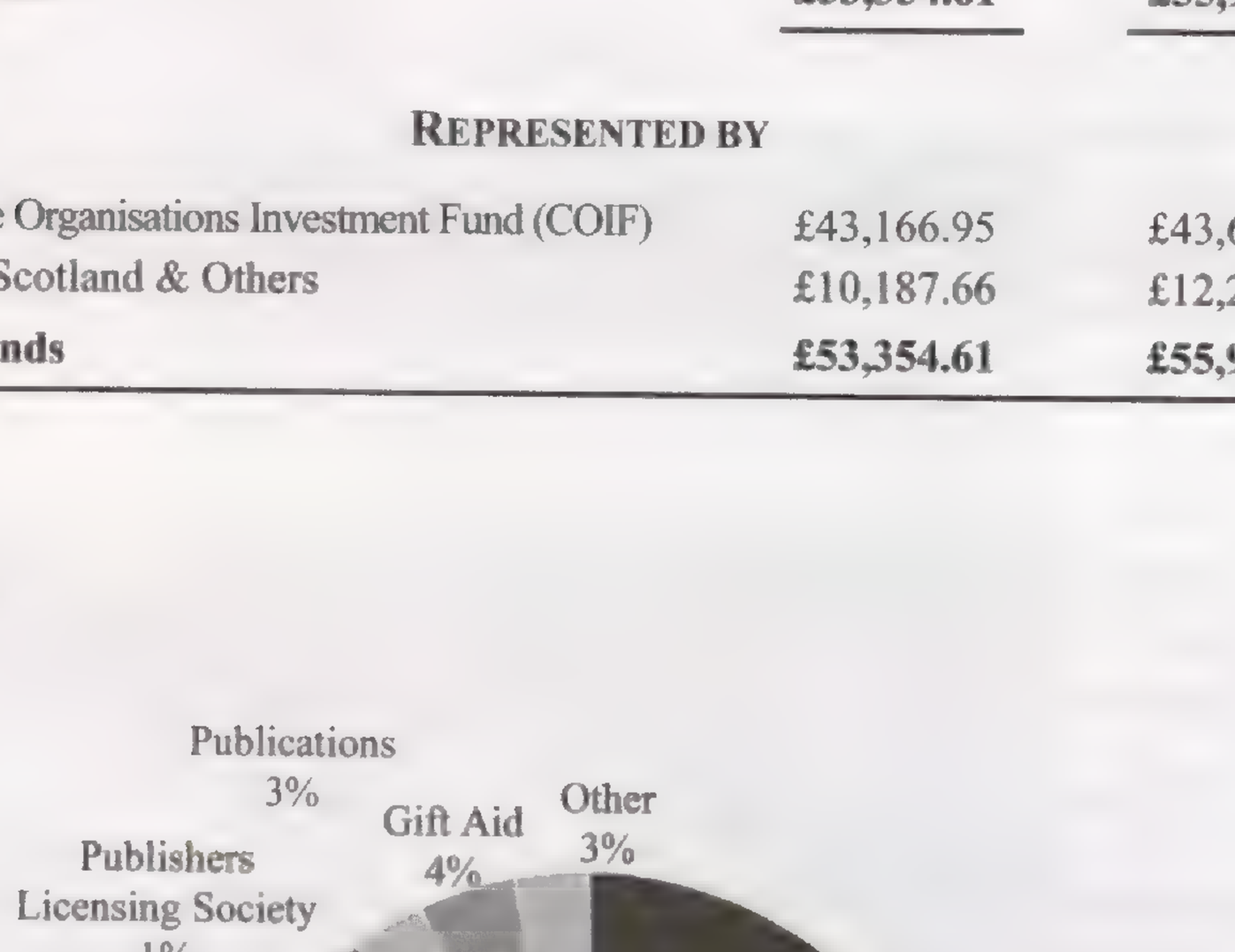
TOTAL FUNDS FOR YEAR ENDING 31 DECEMBER 2009

Ordinary Account	£33,305.50	£34,880.87
Centenary Fund	£7,241.41	£7,313.11
Greenfield Fund	£2,720.78	£2,747.72
Publications Account	£10,086.92	£10,960.96
Total Funds	**£53,354.61**	**£55,902.66**

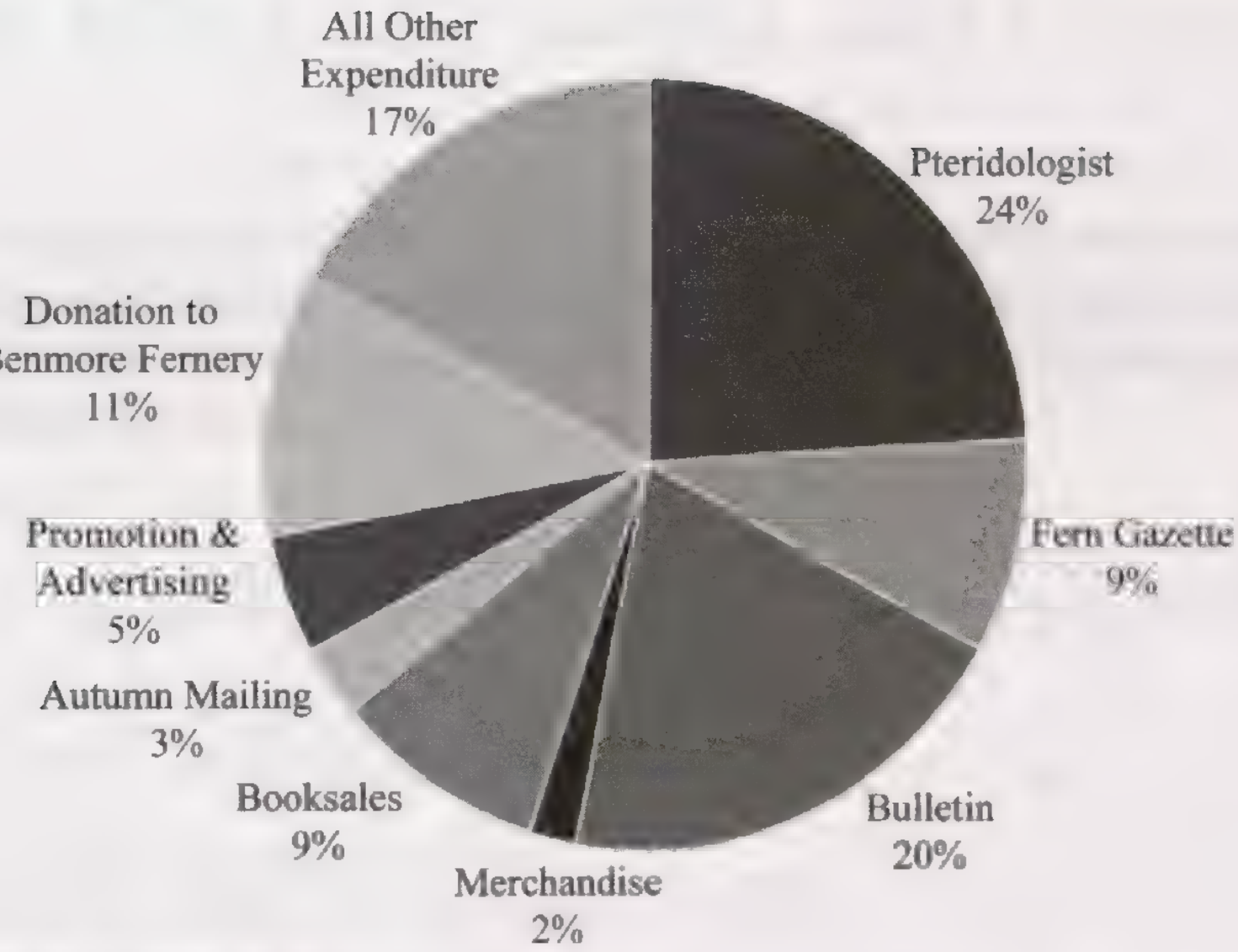
REPRESENTED BY

Charitable Organisations Investment Fund (COIF)	£43,166.95	£43,695.20
Bank of Scotland & Others	£10,187.66	£12,207.46
Total Funds	**£53,354.61**	**£55,902.66**

INCOME 2009



EXPENDITURE 2009



NOTES TO THE ACCOUNTS

1. The accounts reflect the subscriptions actually received in the year.
2. The Society has not paid anything to an agency for advertising but has been promoting and advertising via RHS national shows and public display days.
3. The Society possesses the following stock:
   Back issues of the *Bulletin*, *Fern Gazette* and *Pteridologist* valued at approximately £2,000.
   Merchandising valued at approximately £2,500 & capital of £1,512.59.
   Booksales – new and second-hand books valued at approximately £7,000 & capital of £818.83.
   FSC Key to Common Ferns – 247 valued at £494.
   BPS Special Publications entitled (no. copies) valued at: Fern Names and their Meanings (77) £346; Polystichum Cultivars (43) £537; Cultivation and Propagation (233) £1,165; New Atlas of Ferns (63) £567; History of British Pteridology (704) £2,112; Fern Books Before 1900 (363) £5,445; BPS Abstracts & Papers (371) £1,113; Occasional Paper of the BPS (25) £62; CD Rom – BPS Minute Book (6) £60.
4. Full details of Merchandise and Booksales Accounts can be obtained from the Managers.
5. The Society decided to split our two Restricted Funds into 'Capital' and 'Interest'.
   The 'Interest' section of the Funds is available for payment as grants.
6. No grants were paid in 2009 but £2,500 was donated towards restoration of Benmore Botanic Garden's Fernery for interpretive material; fern posters and acknowledgement of the BPS's support will be displayed.
7. Computers for specific BPS officers' use are being leased from Dell Computers. This gives the Society the ability to keep up with computer technology without having to invest capital funds.
8. Gift Aid returns listed on these accounts are for 2008 and 2009. The figure for 2008 was £1,044.38 and for 2009 £891.29. The reduction in the amount is due to the Treasury changing the percentage return from 28% to 20% in the 2008 budget.
9. In 2008, several credit/debit card input slips were NOT entered into the BPS account by BoS, as noted in the 2008 accounts. Although BoS were persistently chased, none of the misplaced entries were found and no reparation was offered by BoS. Therefore the sum of £178.70 had to be written off.
10. Note 6 to the 2008 accounts stated that a report by Sarah Whittingham (recipient of a BPS grant) would be published in the 2009 *Bulletin*. This will instead feature in the 2010 *Pteridologist*.
11. Interest rates have been very low and the BoS account received NO INTEREST at all in 2009 as interest is only paid at 2% below base rate. Even the COIF interest started the year at 2.2% and dropped to 0.5% by the end of December.
12. Donations include £190 prize money (Silver Medal) from Tatton Park RHS Show and an OPAL grant of £500.

Gillian Smith, Treasurer

ACCOUNTS FOR THE YEAR ENDING 31 DECEMBER 2009

I have examined the accounting records maintained by the Treasurer of the British Pteridological Society. I can certify that the accounts presented to me are in accordance with the books and records.

Alexander Storie AIB Scot., Independent Examiner, 20 February 2010

REPORTS OF OFFICERS & COMMITTEE APPOINTEES FOR 2009

GENERAL SECRETARY – Yvonne Golding

In 2009 the BPS committee first met in January at The Natural History Museum in London. We had our AGM in Manchester at the University Museum where we welcomed our overseas member Piet Bremer from The Netherlands and Joan Watson from Manchester who each gave stimulating talks on very different aspects of Pteridology. We also welcomed Pat Acock and Jennifer Ide as Vice-Presidents and in this final year of Robert Sykes' Presidency we elected Mary Gibby as the President-elect. This new committee met in May at the Royal Botanic Garden Edinburgh and we were back to the NHM in London for our October meeting. Also at our AGM we took great pleasure in awarding Honorary membership to Barry Thomas and John Woodhams who between them have been members of the Society, holding various Committee positions, for about 85 years! We hope they continue to enjoy their membership. We also recognised the efforts of Spore Exchange Organisers Anne and Barry Wright and our ex President and tree fern expert Alastair Wardlaw with Outstanding Contribution Awards. Our committee is very hard working and we take great pleasure in acknowledging their efforts. We awarded the second J.W. Dyce award jointly to Fred Rumsey and Helena Crouch for their entertaining and informative article 'Brake Out' in *Pteridologist* 2008. The award (of £100) is open to anyone who writes an interesting and informative article for any of our publications.

Since our AGM of last year we have learned of the death of Major Richard Unett who was a real stalwart of the BPS Leeds & District Group for almost 20 years and a regular at national field meetings (his obituary is in this *Bulletin*), and Dr Derek Hill of Reigate, Surrey. Our sympathy goes out to their families.

A BPS grant from the Centenary Fund to Dr Sarah Whittingham has come to fruition with the publication of her charming book *The Victorian Fern Craze*, in which our Society is acknowledged. We eagerly await her next book on Pteridomania published by Francis Lincoln, which is due out at the end of 2010. Now that the BPS Archive is safe and fully accessible at Manchester Museum we are hopeful that Sarah may find something of interest there to report in her forthcoming book.

A donation from the BPS was made to the Royal Botanic Garden Edinburgh to help towards the restoration of a Victorian Fernery at Benmore Gardens, near Dunoon. The restoration is now complete and a small group of BPS members attended the official opening. It was a joyous occasion and the fernery is truly wonderful. There was also a very good exhibition on all aspects of Pteridology including a section on our Society. Our incoming President, Mary Gibby, was instrumental in this venture and has produced a lovely book *The Benmore Fernery, Celebrating the World of Ferns* in which our contribution has been acknowledged. You can read all about the opening of the fernery on our website.

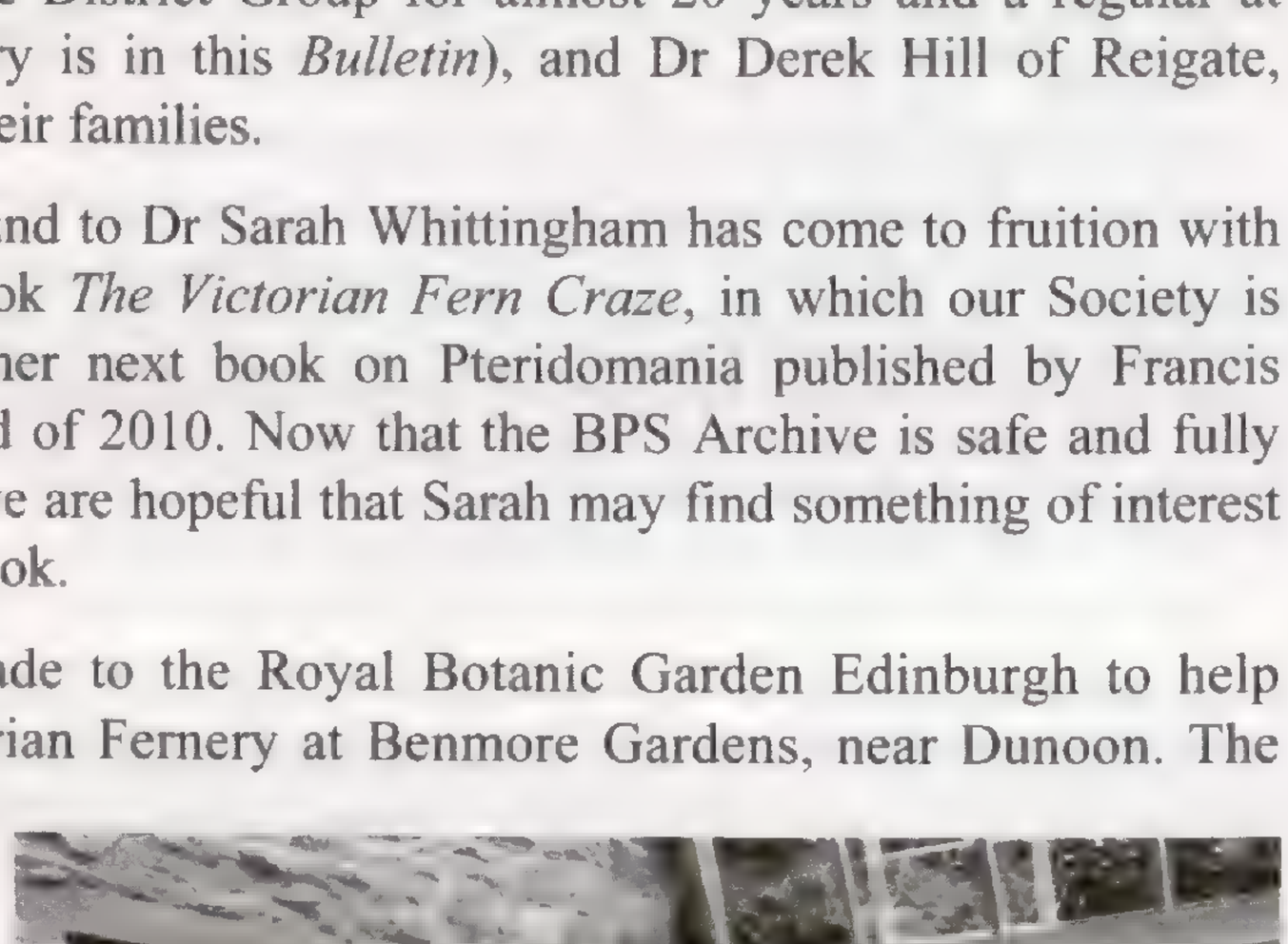


photo: Q. Whittingham

Opening of Benmore Fernery

Robert Sykes, Yvonne Golding, Frank McGavigan, Adrian Dyer, Mary Gibby, Alastair Wardlaw, Sarah Whittingham, Heather McHaffie, Frank Katzer, Jackie Wardlaw

On the publications front, 2009 saw the bumper 25th Edition of *Pteridologist*, now in the capable hands of Martin Rickard and Alec Greening. Our full colour fern magazine is very popular and a great incentive to attract new members. Every year the *Bulletin* seems to get larger, which is a reflection of the increased activity of the Society over the years, reporting on the wide-ranging travels of BPS members and demonstrating the extra hard work put in by Alison Paul; 2009 is her 20th edition as sole editor and before this she co-edited three editions with Matt Busby; for the first ten years she was also our Membership Secretary, a post she held for twelve years. It is because of this that we are awarding Alison a BPS Outstanding Contribution Award for all her efforts over the years.

I am very pleased to report that our scientific journal *The Fern Gazette* is safe because Mary Gibby, as well as becoming our next President, has agreed to continue as Editor with extra editorial help from Pat Acock and Jennifer Ide and with Andrew Leonard's continuing support with electronic production. You will have also noticed the expansion of our website and the important new addition, set up by Anthony Pigott, of the Fern Forum, which is accessed by fern lovers all over the world and helping to put the BPS on the International map. We look forward to future developments including Pteridowiki, which will further help to raise the profile of the BPS.

In our quest to raise awareness of ferns and our Society we formed a new Education Subcommittee headed by Alison Evans. This met for the first time in October 2009 in Edinburgh. There are many exciting plans for the future and I look forward to reporting on some of these next year. To further these objectives we would also like to appoint a Publicity Officer. If you have any skills in this area or would be prepared to help and advise us about publicity matters then please get in contact with Committee Secretary Graham Ackers.

Another of our BPS aims is to be able to allocate all members, if they should wish, to a Regional Group so they can be put in touch with local fern-lovers and take part in meetings, excursions, exchange horticultural knowledge (and plants!) and monitor and record native ferns in their area. We already have seven flourishing Regional Groups in Scotland, Yorkshire, North-West and South-East England, East Anglia, Cornwall, and South Wales and the Borders. In November 2009 a small group of BPS members met at The Firs, University of Manchester, and formed a new group, Manchester and North Midlands, to cover Greater Manchester, Cheshire, Derbyshire and Staffordshire. This will initially be organised by Yvonne Golding until someone more qualified, or with more time, comes along. A programme of excursions has been organised for 2010 and this, along with other Regional programmes, can be found on our website.

One of the strengths of our Society is the horticultural knowledge amongst its members and the huge range of fern species and cultivars that are grown in their gardens. Another strength is the generosity of BPS members in donating ferns to other members and to worthy causes. Last year members donated more than 60 taxa of *Dryopteris* to add to our Patron's collection at Highgrove and this we understand will be registered as a National Collection. In the past, members have donated ferns to other gardens, such as The National Trust's Ickworth House in Suffolk, and English Heritage's Brodsworth Hall in Yorkshire. We hope that members will continue to support fern growing in public gardens so they can be enjoyed by all.

Another way to meet enthusiastic gardeners and encourage them to grow ferns is through our presence at flower shows. This year Southport Flower Show was 75 years old and the BPS was there with a very attractive stand organised by Michael Hayward. Southport still has amateur classes for ferns and those of us that enter need more competition! So I urge you to get up to Southport this year, enter some ferns (it can be quite lucrative) and visit the newly restored fernery.

In 2009 the BPS was represented for the first time at the RHS Tatton Park Flower Show. This gave us the opportunity to engage with thousands of visitors. The event was co-ordinated by Yvonne Golding with a team of 20 helpers. This was quite ambitious but we pulled it off, winning a Silver medal and attracting 15 new members for the Society. It was hard work but a

great deal of fun and I would like to thank all those that helped to make it possible. You can read about our presence at shows in the *Bulletin* and on our website where there are also quite a few pictures. Now we would like to capitalise on that success and have a presence at other RHS shows, moving around the country from year to year. So in 2010 Gill and Bryan Smith will co-ordinate a BPS venture at BBC Gardeners' World Live at the NEC, Birmingham, and in 2011 we hope to exhibit at The Scottish Show. I am confident that BPS members will continue to be as generous and supportive as they were for Tatton.

Another new venture for the BPS in 2009 was our event 'Ferns and Fossils' in collaboration with The University of Manchester Museum and sponsored by a lottery grant from The Open Air Laboratories Network (OPAL). The programme for the day catered for all ages and all levels of knowledge about ferns, their relatives, and their fossil ancestors. We had a constant stream of visitors, many of whom were learning about ferns for the first time. Manchester Museum estimate that around 2,000 people passed through the doors and around 1,000 actively participated in this event, which was part of the Museum's Big Saturday series. You can read all about the event in the *Bulletin* and on our website. Again I would like to thank all those BPS members who helped, Manchester Museum staff and OPAL who supported the event.

I hope you will agree that your committee is working very hard to help maintain the success of our Society in a changing world and to fulfil its charitable purposes. But we want all our members to contribute by supporting our activities and encouraging friends and family to join the BPS and take an interest in ferns.

In conclusion I would like to thank our outgoing President Robert Sykes who leaves the Society in very fine fettle with many exciting developments still to come; it has been a pleasure to work with him. Finally, I would like to take this opportunity to congratulate Mary Gibby on her recent OBE for services to botany. This was well deserved and we feel privileged to welcome her as our new President.

MEMBERSHIP SECRETARY – Mike Taylor

2009 was a more encouraging year, with a small increase of 18 in membership numbers; hopefully this trend will continue into 2010. We now have a total of 687 members made up of 466 Full, 91 Optional (not receiving *The Fern Gazette*), 30 Complimentary, 8 Honorary and 11 Student members, and 81 Subscribers. The number of Subscribers has decreased by 1 and the number of members who pay via the AFS has decreased by 3 to 64. I was afraid that we would lose a lot of subscribers due to the recession but the numbers have held up and many have already renewed for 2010. The price of £20 for AFS membership is good value, however, we only have 7 members who take advantage of our reciprocal arrangement, which is why I am embarrassed every year when George Yatskievych and I settle up. At Tatton Park Show Yvonne had a recruiting drive that brought in 15 new members; we hope they will renew their membership in 2011.

Due to changes in the taxation rate the amount recovered in Gift Aid decreased from £1,044 to £891. This decrease in revenue could easily be reversed if those members who have not signed up for Gift Aid did so; it's so easy and you only need do it once. The Society has benefited by £6,979 since we first started claiming Gift Aid.

MEETINGS SECRETARY – Rob Cooke

Last year we had a very successful meeting programme again, and the reports are in the *Bulletin*. My thanks as ever to those who have organised and run the meetings so well. We have another full programme planned for this year. As you read this we will have held the first meeting in Nice, in France, but later in the year we will be going to Wales, Scotland and Ireland, as well as England, consisting variously of garden and field visits. If you have missed the programme, or you now have the opportunity to come along then please do so; you can find the latest details on the BPS website. This national programme in

complemented by a full range of regional meetings, and again details of these programmes are on the Web or available from group leaders.

As ever I am indebted both to those who have offered to run meetings, and also the meetings subcommittee who help pull the programme together; if there is somewhere in particular you would like to visit, then please do get in touch; we are always looking for new ideas, especially if you are prepared to help out with the organisation.

CONSERVATION OFFICER – Fred Rumsey

I have continued to contribute to groups underpinning the UK BAP process and which are active in the assessment of threats and conservation status of British fern taxa. There have been a few requests for information or assistance with regard to local conservation issues, which I hope have been satisfactorily answered. We contributed to a consultation on suggested additions to Schedule 9 of the Wildlife and Countryside Act, which would limit the sale and knowing dispersal of potential invasives – some species of *Salvinia* had originally been proposed but were not felt to pose a risk under current climatic conditions.

The possibility of developing the Society's recording activities to assist in the conservation of some of our most threatened species is discussed in the Recorder's report.

RECORDING OFFICER – Fred Rumsey

Firstly, an apology for the lack of progress on some long standing items that I hope to deliver shortly – our revised recording card and an article destined for *Pteridologist* on recording. I want the latter to elicit discussion and shape what we do in future and how we do it. To that end I have been liaising with the BSBI recording committee who are currently preparing their recording strategy. Seeing where our interests coincide and working with their very well developed recording network is of great value to us. I was fortunate to be asked to the Yorkshire group's AGM and could thus hear about their now long-term monitoring activities for *Botrychium* by roadsides on the Moors and hopefully a programme to monitor re-introduced populations of *Woodsia ilvensis* in Upper Teesdale. I hope that we can develop similar initiatives with local BPS groups elsewhere. A recent call for expressions of interest has come from DEFRA's Biodiversity Research and Evidence Programme. They have funding to help increase our understanding of the status, taxonomy or ecology of selected Biodiversity Action Plan species. For us this means *Dryopteris cristata*, *Lycopodiella inundata*, *Pilularia globulifera*, *Polystichum lonchitis* and *Woodsia ilvensis*. Members of the Society have in the past performed, or contributed to, comprehensive national surveys of at least three of these and as we heard above are still actively involved with some. It is my intention to explore the possibilities of working in conjunction with the BSBI and others, to deliver through our membership's activities (field meetings, workshops, etc.) over the next three years repeat surveys of these species, for which we could gain supporting funds.

I would also encourage anyone with records or observations of alien fern species escaped from gardens to contact me with the details. Several new (alien) taxa to the British list have been added (e.g. *Pteris umbrosa*) and some may go on to become invasive. *Cyrtomium fortunei* has been found new to several vice-counties and would seem to be increasing rapidly. We also have a new native taxon in *Dryopteris pseudodisjuncta* (*D. affinis* subsp. *pseudodisjuncta*) found by Ken Trewren some time ago in southern Scotland but only recently confirmed.

PUBLICATIONS SECRETARY – Martin Rickard

The journals have all been issued more-or-less on time this year. There have been no new Special Publications nor are there any in the pipeline. Any proposals for future issues should be sent to me for consideration by the Committee.

FERN GAZETTE EDITOR – Mary Gibby

Andrew Leonard continues to provide excellent support in the editing and production of *The Fern Gazette*. Volume 18 Parts 5 and 6 have been published, though owing to my work commitments at the Royal Botanic Garden Edinburgh in late autumn, Part 6 couldn't be sent to press until early January 2010. The position of editor has been reviewed during the year, and I am pleased to report that Patrick Acock has agreed to help with the work load, coordinating correspondence with authors, and I trust this will result in smoother planning and organisation, to ensure regular publication.

PTERIDOLOGIST EDITOR – Martin Rickard

The 2009 *Pteridologist* was a bumper issue with 80 pages. Depending on copy, future issues may be smaller but if enough suitable copy is submitted Alec and I are happy to continue to let the journal grow. Finance may eventually become a problem but currently Alec is managing to keep printing costs in check so hopefully the 2010 issue will also be a good size.

Both Alec and I were very pleased with the reaction to the 2009 issue. Very many members bothered to write, e-mail, telephone or simply comment on how much they enjoyed it. It is of course you, the membership, that make the journal, so let me repeat – please send me any notes, articles and pictures of general fern interest that you might think suitable for publication. Use previous issues to get a feel for the kind of material. Please bear in mind that the annual deadline for inclusion in that year's copy is the 31st January.

BULLETIN EDITOR – Alison Paul

The 2009 *Bulletin* is the largest yet, with 100 pages and 60 contributors. This reflects the continuing good number of BPS meetings, both national (including overseas meetings) and those organised by our growing number of Regional Groups. I would again make a plea to contributors to send in their reports or photographs as soon as possible after the event. Many thanks to those who regularly do this.

I am pleased to report that the excellent Index to volumes 1 to 5 of the *Bulletin*, compiled some years ago by Jonathan Crowe is finally available on the new *Bulletin* page of the website. I would like to take this opportunity to apologise to members and to Jonathan in particular for the length of time this has taken to appear. It is still hoped to produce a hard copy, for which costings are being obtained.

WEBSITE EDITOR – Anthony Pigott

The website continues to develop, both with the usual updates of BPS information, such as meetings programmes, spore lists and publications, and new features in the past year such as the BPS Event Diary, the photographic recording project and coverage of BPS participation at shows. The front page has continued to evolve, with much more information directly accessible from there. We have started a system of 'content providers' to enable more people to be involved in the acquisition and update of material for the website.

Probably the biggest event of this year has been the launch of the BPS Fern Forum. This enables experts and enthusiasts from all over the world to exchange information about all aspects of pteridophytes. We see this as a significant service provided by the Society and one that will enhance its visibility and standing.

As always, offers of contributions and other help are extremely welcome.

EDUCATION OFFICER – Alison Evans

I took on the role of Education Officer in May 2009, and since then have been on a steep learning curve, ably supported by the Education Subcommittee: Yvonne Golding, Heather McHaffie, Bridget Laue, and more recently Frank McGavigan. An early task was to find out what educational resources and opportunities already exist. The BPS already provides a great deal of information through the website, journals, and meetings of various kinds. Yvonne has

produced a series of promotional posters that have already been used at several meetings. Stands at the Tatton Park and Southport flower shows helped to raise the profile of ferns and the BPS with members of the public, and the Manchester Museum 'Big Saturday' was an enormously successful educational event with around 2,000 visitors. Material from this event will be made available on the website, and may be used at similar events in future, for example at an open day in the new Gateway at the Royal Botanic Garden Edinburgh.

The Education Subcommittee met in October to discuss future plans. Frank is preparing a proposal for the production of a leaflet on ferns in Scottish Gardens, to raise public awareness and promote gardens with fern collections. If this pilot is successful, this venture could be repeated in other parts of the UK. We are also working on updating existing information leaflets and looking to increase the range of posters on different aspects of Pteridology. Working with the website editor, we hope to increase the range of educational material available on the web. A request for information about resources such as speakers and private fern gardens went out with the Autumn mailing. We are also looking to build links with other organisations and societies. Heather took posters and leaflets to the Annual Meeting of the Botanical Society of Scotland and BSBI, and I will be doing the same for the Yorkshire Naturalists' Union conference this spring.

Much of our effort so far has been directed towards recruiting new members and educating the general public. I am also conscious of the need to provide more detailed, in-depth education for members looking to further their horticultural or botanical knowledge, and to promote the development of the Society as a recording organisation, with a responsibility to support taxonomic and other research on Pteridophytes. The indoor meetings on aspleniums and on hymenophyllums were excellent examples of more specialised education. I would be pleased to have suggestions from members on other topics they would like to see included in our programme.

PROJECT OFFICER – Anthony Pigott

We currently have four main projects underway:

Recording & Mapping. This project will implement a number of items all aimed at increasing the participation of the BPS in the recording and analysis of pteridophyte distribution in Britain and Ireland. This will include encouraging members to make records and working with the BSBI to facilitate the input of new data and access to existing records. This has been further delayed by the availability of key individuals but we now have alternative plans and hope to launch it very soon. (See also Recording Oficer's report.)

Photographic Recording. This project is separate from but complementary to the Recording & Mapping Project. It invites people to take photographs of fern sites at different points in time with a view to learning about variations in conditions and abundance. The project was launched in April 2009 with full details on the website. Members are strongly encouraged to participate.

On-line Journals. The BPS has decided to make back numbers of its journals available on-line. There is a tremendous wealth of pteridophyte knowledge in those pages that is currently difficult to access and search. This project has looked at the technical and administrative issues involved. We are now starting to make available recent issues that are already in some digital format. We have tested the options for bulk scanning of the older paper-only issues and hope to implement this in the coming year.

Website Development. We see the website as being of increasing importance to the BPS and the way it communicates with its members and the public. This project continues to look at ways to get more people involved and to make the website easier to expand and develop. As a result of the Fern Forum implementation, the BPS now has additional web hosting facilities available, which will lead to innovative ways to implement some website features such as an expanded and revamped *Where to see Ferns*. (See also Website Editor's report.)

SPORE EXCHANGE ORGANISER – Matt Busby

Having taken over the responsibility for the Spore Exchange from Anne and Barry Wright in December 2008, I am pleased to report that all 117 requests were completed and sent out before the 1st April 2009.

It is some ten years since I last studied the list of spores offered and I recall that at a Committee meeting last year a comment was made concerning the paucity of British fern varieties offered in the current list. I was surprised to find a number of varieties in my garden that have not been offered for some years and I felt that I had let the side down. This is a weakness that I intend to address for the 2010 list. May I suggest that members check through last year's list and if they find ferns in their collections that are absent from the list, would they kindly donate spores for next year.

May I repeat the plea by Anne and Barry Wright in their report last year. I shall always be pleased and willing to answer any queries about donating spores. Please e-mail any queries to spores@ebps.org.uk.

May I take this opportunity to thank Anne and Barry for all their help and for ensuring a smooth handover, and various members of the Committee that have come to my aid on several occasions.

PLANT EXCHANGE ORGANISER – Jonathan Crowe

Donor forms were distributed with the spring 2009 mailing. The Plant Exchange List was compiled and distributed mid-March 2009.

Statistics for taxa offered are shown below:

Status Code	Plant Status Description	No. in 2004	No. in 2005	No. in 2007	No. in 2008	No. in 2009
Sp0	Sporeling less than 1 year old	10	0	0	6	13
Sp1	Sporeling 1-2 years old	13	15	13	17	18
Sp2	Sporeling 2-3 years old	13	15	7	19	16
Esp	Established plant	11	39	7	20	30
Bul	Bulbil	0	0	1	6	5
Rhs	Rhizomes	11	1	1	1	4
	Plant status not stated by donor	0	0	0	0	0
	Totals	**58**	**70**	**29**	**69**	**86**

The statistics for participants are shown below:

Category of Participant	2004	2005	2007	2008	2009
Donors only (thus only offering plants)	6	8	7	4	6
Donors also having 'wants'	5	-	-	3	2
'Wanters' only (thus not offering plants)	3	-	-	-	-
List requesters only (neither offering plants nor having 'wants')	16	19	13	3	17
Total number of participants	**30**	**27**	**20**	**10**	**25**

Participation in the scheme has increased over last year, both in terms of the number of taxa offered and of people using the scheme – a very encouraging trend. The number of members requesting the List was augmented by requests from new members who had been

advised of the scheme in their Joining Pack. Several requests that I received were from new members starting a collection. For the first time we had participants from mainland Europe. Despite few taking the opportunity in 2009, it is intended to retain the 'wants' feature next year.

BOOKSALES ORGANISER – Frank Katzer

BPS Booksales had a very busy 2009. The highlight was the sale of Nigel Hall's book collection, which reached its pinnacle at the AGM in Manchester. A list of all available books was circulated to members. Books were either sold directly, if requested by only a single person or were sold off in a silent auction if they attracted more interest. A set of 27 books that attracted most interest were sold at an auction facilitated by Roland Ennos at the AGM. Most of Nigel Hall's books were sold, recouping the purchase price of the whole collection and making a small profit. The unsold books were added to the Booksales stock list. Recently, Booksales was bequeathed the book collection of the late Les Dugdale and I also bought a collection of books for the Society that belonged to the late Bernard Williams. I also bought new books for members, including Mary Gibby's *The Benmore Fernery*, *Celebrating the World of Ferns* and Sarah Whittingham's *The Victorian Fern Craze*, as well as a book on the pteridophytes of Réunion Island: *Flore des Mascareignes*, *Pteridophytes*. I am in the process of obtaining David Lellinger's *A Multilingual Glossary for Taxonomic Pteridology* from the American Fern Society, and various books on Chinese ferns. All in all it has been a fairly eventful year.

MERCHANDISE ORGANISERS – Bryan & Gill Smith

We had another reasonably successful year for Merchandising in 2009, with nearly 20 mail orders (which came from the UK, Canada and Eire). This compared with 25 (from the UK, USA, South Africa, Denmark, Hungary and Eire) in 2007, so there were fewer overseas orders in 2009. Face-to-face selling continued, and was again our main source of income. We sold merchandise at the Manchester AGM in April, at the Kew national meeting in May, at the South Wales and Borders weekend meeting in July, and at our own East Anglia group meeting in November. As usual, members had the option to save postage by pre-ordering items for meetings we attended. We also had success selling items to the public at the RHS Tatton Park show in June. Colleagues in the north, as before, sold merchandise at the Southport show in August, and at the AGMs of the Yorkshire and the North-West Regional Groups. Steve and Karen Munyard kindly sold merchandise at the Reading *Hymenophyllum* workshop in November, which we were unable to attend. Overall, sales amounted to just over £1,000, which was similar to sales in 2008. Further details can be found in the Merchandise section of the Treasurer's accounts.

Encouraged by the success of the 2009 BPS calendar, we produced a 2010 calendar, this time featuring several photos submitted by BPS members. We would be very pleased to receive further ferny photos for the 2011 calendar.

The current merchandise list (November 2009), which was distributed with the autumn mailing, boasts some 17 ranges and a total of nearly 60 individual products. For this list we introduced a new double hand lens following a member's suggestion and we also introduced the use of PayPal as an additional way to pay for items. The list continues to be available through the BPS website, and we send out new order forms when we fulfil orders. As ever, if anyone has any ideas for ferny items they'd <u>really</u> like to see and that they think other members would also like to buy, please do let us know.

HORTICULTURAL INFORMATION ADVISER – Matt Busby

It has been an interesting year with various problems being presented to me by both post and e-mail. I was particularly pleased to receive a letter from a member telling me how successful they had been with their spore sowings and asking how they should proceed with

subsequent treatment. It is always pleasing to receive information on members' successes. Other problems involved the identification of several ferns and two concerned difficulties due to incorrect potting composts.

ARCHIVIST – Matt Busby

I am pleased to report that on the 1st December 2009, the Society's archive was moved from Coventry to the Manchester Museum in Oxford Road, Manchester. At last we have a safe and secure place for all the articles, letters, photographs and other items that the Society has accumulated over the last 119 years. May I express my thanks to Yvonne Golding by whose brilliant initiative this event has taken place. I also thank the Curator of Botany, Leander Wolstenholme, and the Curator of Collections, Malcolm Chapman, for their guidance and assistance in this matter. I particularly want to thank the team of willing helpers who assisted us in getting the archive up three flights of stairs. I also need to thank my youngest son, Matthew, for having a day off work to transport me and the archive to Manchester. Donations of items continue to arrive and I thank those members who have sent them in. I am always pleased to receive items for the archive, especially documents, letters and photographs that are pre-1970.

We are particularly short of pteridological items that pre-date the formation of our Society in September 1891. May I request that members keep their eyes open for any articles, letters, photographs or other items from that period to donate to our archive. I am always prepared to consider the purchase of more interesting items.

FERN VARIETIES NOMENCLATURE SUBCOMMITTEE – Matt Busby

This subcommittee has passed another year without the need for a meeting. The make-up of this subcommittee was Dr A.C. Leslie, M.H. Rickard, and A.R. Busby as convener. As there has been no business on this matter for a number of years, it was decided at the January 2010 Committee Meeting that this subcommittee should stand down.

CULTIVAR REGISTRATION SUBCOMMITTEE – Robert Sykes

The aim remains to establish the Society as the International Cultivar Registration Authority, initially for *Polypodium*, and later for other genera. Martin Rickard has prepared a full list of references in the literature, and the task is to render that into a form acceptable to the International Society for Horticultural Science. This is being tackled, but is proceeding slowly, owing to other commitments of the members of the group. The subcommittee will look at the possibility of progressing another genus in parallel.

THE AMERICAN FERN SOCIETY

The AFS invites all readers of this *Bulletin* to join the American Fern Society. You are welcome to visit the AFS website: amerfernsoc.org. Regular members receive *Fiddlehead Forum* five times a year, a newsletter published for those who are interested in growing ferns, hunting for them and expanding their knowledge of ferns. Journal members also receive the scientific quarterly *American Fern Journal*. Membership costs $19 and $32 per annum respectively for members residing outside USA, Canada or Mexico, including postage for airmail-assisted delivery. For particulars please write to Dr George Yatskievych, Missouri Botanical Garden, P.O. Box 299, St Louis, Missouri 63166-0299, USA (george.yatskievych@mobot.org). Online credit card payment is now available for the AFS via the AFS website.

AFS SUBSCRIPTION PAYMENTS: Our societies have an exchange arrangement whereby members of the BPS can pay their AFS subscription through the BPS Membership Secretary and *vice versa.* To take advantage of this, prospective members residing in Great Britain should contact Mr M.G. Taylor, Westlea, Kyleakin, Isle of Skye IV41 8PH (Membership@eBPS.org.uk).

AWARDS

HONORARY MEMBERSHIP – BARRY THOMAS

During 2009 Honorary Membership was conferred on Barry Thomas for his services to pteridology.

Barry Thomas joined the British Pteridological Society in 1963 and is therefore one of our longest standing members. He was Treasurer from 1974 until 1988. From 1971 until 1973 he was part of the editorial team for the *British Fern Gazette*, continuing in the team in 1974 and 1975 when it was issued as the *Fern Gazette*. Later, from 1998 until 2001 he took over editing the *Pteridologist*. This was appropriate as it had been his idea back in 1984 to split the general interest items out of the *Bulletin* to form the *Pteridologist*.

photo: Y.C. Golding

Barry Thomas being presented with Honorary Membership certificate by President Robert Sykes, AGM 2009

Barry is obviously a man of many talents but for me the highlight of his time with the Society was his term as our President from 1988 to 1991 in the run up to our centenary year, 1991. Being President is never easy but at that time Barry raised the stakes and led all his officers into organising an amazing series of events and publications. These included:

- The production of travelling exhibitions to tour nationally.
- The organisation of publicity in major horticultural journals, on radio and on television including *Gardeners' World*.
- The organisation of the very successful week-long International Symposium on Cultivation and Propagation of Pteridophytes with a weighty accompanying publication.
- The organisation of a nationwide tour of gardens following on after the symposium. This tour included a competitive exhibition of ferns at Pebworth, the largest I have ever seen.
- The AGM held in The Lake District. This attracted almost exactly one hundred members to the celebratory dinner and was accompanied by a magnificent display of fern-decorated items brought in by members.
- A Society stand in the Great Marquee at the Chelsea Flower Show that won a Silver Medal. In addition the Society provided plants for a fantastic display of ferns around a waterfall staged by the Royal Horticultural Society, also in the great marquee.

- The publication of Special Publication Nos. 3, 4 and 5. *The Cultivation and Propagation of British Ferns*, *The History of British Pteridology* and *The British Pteridological Society Abstracts ... 1894-1905*. In addition, our centenary triggered a Natural History Museum publication *A World of Ferns*, part authored by Barry.
- Finally Barry promoted the creation of the Centenary Fund.

On top of all this the Society maintained its core activities. *The Gazette*, *Pteridologist* and *Bulletin* were produced on time and all the other Society functions continued uninterrupted. All this took a huge amount of planning and many hours of effort by many members – Barry was not directly involved in all these projects but the impetus came from him.

Barry's other publications on ferns include: *Welsh Ferns* (7th edition) with George Hutchinson, *The Phylogeny and Classification of the Ferns* with Clive Jermy and Jim Crabbe and the slightly less ferny *The Evolution of Plants and Flowers*, as well as many books and papers on palaeobotany.

For 12 years Barry was Keeper of Botany at the National Museum of Wales. He used his time there to help promote ferns. He staged ferny exhibitions, gave some financial support to pteridologists and helped build up the Museum's fern book collection. More recently he has been a Professor at Aberystwyth University. This has enabled him to live in a very ferny part of his native Wales but it unfortunately means he cannot easily attend Society meetings in London.

Barry is primarily a palaeobotanist. Nevertheless for at least 46 years he has been very keen on ferns, using his interest very successfully to promote them and our Society.

Martin Rickard

Honorary Membership – John Woodhams

During 2009 Honorary Membership was conferred on John Woodhams for his services to pteridology.

John Woodhams has been a real stalwart of our Society for almost 40 years. He joined in 1971 and was elected to the committee the following year. He served on the committee for a total of 22 years, including seven years as a Vice-President. It was John who came to the rescue at a committee meeting in 1998 when we sought a theme for the 2001 Guildford symposium. 'Fern Flora Worldwide – Threats and Responses', on John's suggested topic of conservation, proved a great success. Few years passed in the 1970s and 1980s without John's name cropping up in our journals, either as the author of articles on ferns in cultivation at Kew, or in reports of meetings in which he was involved.

During his long career at RBG Kew John did a lot for ferns. He originally joined Kew in 1959, working first in the Arboretum and then in the fern unit as an

photo: Y.C. Golding

John Woodhams receiving his Honorary Membership certificate, AGM 2009

Improver Gardener. Following a placement on the Kew Horticultural Course and gaining the Kew Certificate he worked in various capacities before taking over from Bert Bruty as Foreman in the Fernery in 1970. Bruty, himself an Honorary BPS member, introduced John to the Society. During the few months that they overlapped John learned a great deal from him – in 1964 Bruty had been awarded the British Empire Medal and in his citation he was said to be "one of the foremost specialists in fern cultivation in the country". In John's charge, the fern collections continued to develop, and the two fern houses were landscaped. John also learned much from Prof. R.E. Holttum, who worked in the herbarium at Kew after his retirement from University of Malaya in Singapore in 1954. Holttum visited the living fern collections weekly to aid his studies and to identify the collections, and took time to talk to John and other staff about different aspects of fern cultivation or nomenclature. Other regular visitors to the fern houses included Peter Edwards (the Kew herbarium curator), and Clive Jermy and Trevor Walker who had research collections at Kew – plants collected on their travels in Trinidad and Malesia. Trevor, like Prof. Manton before him, was enabled to carry out cytological studies on tropical ferns as a result of John's ability to grow on these plants. John believed that the key to successfully growing ferns was to know how and where they grow in the wild, so he greatly appreciated his own fieldwork opportunities in the tropics, including Guyana and Papua New Guinea.

John regularly organised the annual BPS meeting at Kew, giving fascinating talks on his travels and various aspects of his work, and practical demonstrations on many aspects of fern growing, from potting mixes to fern pests, propagation methods and *Platycerium* cultivation, as well as guiding members around the collections in the Lower Nursery and public fern collections. On these occasions John was always ably supported by his wife, Joan, who for many years provided substantial refreshments at most of the Society's indoor meetings.

photo: A.R. Busby

John Woodhams talks to BPS members at RBG Kew, 1991

John has also helped to promote ferns more widely. For example in 1983 he appeared on the BBC *Gardeners' World* from North Wales, discussing the value of ferns in the garden. Matt Busby referred to "John's excellent handling of a complex subject" (*BPS Bulletin* 2(5): 262).

In 1981 John was promoted to Assistant Curator of the Tropical section, playing a major role in developing the Princess of Wales Conservatory, and responsibility for the fern collections passed to others. Sadly, poor health forced him to take early retirement in 1995. Although active involvement in the Society is now more difficult for John, he still continues to take a keen interest in the work of the Society.

Alison Paul

OBITUARIES

Mrs RITA VIVIAN COUGHLIN 1922 – 2009

Midland members in particular were sad to learn of the death of Rita Coughlin at a nursing home in Redditch on the 4th January. Rita had been on her own since the death of her husband Ray in 1996. Sadly, as the years passed she became unable to maintain their garden at Lydiate Ash, Worcestershire, and moved into sheltered accommodation in Redditch.

The Humanitarian service at Redditch Crematorium on the 21st January was attended by many local members of the BPS and the AGS and other friends. Martin Rickard gave the eulogy and reminded us of the many happy hours that we had enjoyed in their lovely garden over the years and of their wonderful hospitality and generosity to visitors. Visitors often went home with some little treasure or other for their own gardens. The garden was often open to the public for the National Gardens Scheme.

So have passed two great gardeners who touched our lives with great joy.

A.R. Busby

MAJOR RICHARD UNETT 1926 – 2008

photo courtesy O. Unett

Richard Unett

Richard Unett died on 25th December 2008, aged 82, following quite a long period of ill health.

Descended from a line of military personnel dating back about four centuries, Richard joined the King's Royal Rifles in 1944. In 1947 he was gazetted to his father's regiment, The King's Own Yorkshire Light Infantry, and remained with them until leaving the army in 1962, having been posted to Malaya for twelve months (where he learnt to speak and write Malay), to Kenya and to Cyprus. Much of this time abroad was in jungle conditions. Back in 'civvy street' he went to live in Earls Court, London, where he created a rock garden fernery, which, I am told, was very much admired. He quickly became involved in civilian activities and joined a professional fund-raising company that specialised in raising funds for schools, etc. He moved to Bradford in 1983 to direct their operations in the north of England, retiring in 1991.

He joined the BPS in 1970 but I first met him at the inaugural meeting of the Leeds and District group of the BPS in 1984. I had written to all the local members of the Society, telling them of my intention to form a local group, and he was the first one to contact me. He said that he would support my efforts, so a meeting was arranged in Leeds and Richard accepted the responsibility of being the group's secretary/treasurer, which he continued to do meticulously until 2003.

Many members will remember his attendance at the Society's national field trips. He was popular and very knowledgeable, as well as being able and willing to do some of the more dangerous investigations. Occasionally I would ring him to ask if he would like to come out on a recce when I was arranging field trips for the group. He was always ready to do this provided it did not interfere with his occupation of fund-raising. I recall on one of these trips we were looking for an old record of *Hymenophyllum wilsonii* near Pateley Bridge,

Yorkshire. Richard spotted one likely place and decided to slide down the rock-face to get a better look at the side of a small stream. There was no filmy fern there, but Richard found that he could not get back up as the rock was almost perpendicular. I had to lie down with my arm over the side and he climbed back up my arm as he would have climbed up a rope in a gymnasium. Richard looked on such a thing as an everyday occurrence.

Apart from his work and his ferny hobby he did a lot of research on his family history, much of which can he found on the internet. He also served on the board of several schools as well as being very active in his local church.

We did not meet up very much in his last years, but kept in touch by phone. I will miss him and I am sure that his presence at meetings will be missed by those who knew him and shared with him the pleasures of those field excursions.

Thanks to: National Archives, Richards's undertaker, and Mr and Mrs Oliver Unett, Richards's nephew and his wife.

Jack Bouckley

IN MEMORIAM

We were also sorry to learn of the death of the following (date joined BPS in brackets):

Dr Derek Hill of Reigate, Surrey (1989)

MEMBERSHIP LIST: ADDITIONS & AMENDMENTS

NEW MEMBERS

** new members 2009, ** new members 2010, # members rejoined 2009, ## members rejoined 2010*

* Anderson, Mr K., 101 Prince Albert Road, Southsea, Hants. PO4 9HT. omagerjanway@gmail.com
* Anderson, Ms S., 6240 27th Ave NE, Seattle, WA 98115-7114, USA
Atack, Mr P.B., 12 Lord Street, Morecambe, Lancs. LA4 5HZ
* Bancroft, Mr N., School of Horticulture, The Royal Botanic Gardens, Kew, Richmond, TW9 3AB. n.bancroft@kew.org
* Barton, Mr S., The Old Gatehouse, 2 Brocklehurst Avenue, Macclesfield, Cheshire SK10 2RY. shaun@shaunbarton.wanadoo.co.uk
Bashford, Mr R., Woodchippings, Juniper Hill, Brackley, Northants. NN13 5RH
* Benham, Mr D.G. & B.F. King, 19 Priory Lane, Kents Bank, Grange-over-Sands, Cumbria LA11 7BH. david.g.benham@googlemail.com
* Bird, Ms N., Oakview Farm, 49 Elton Lane, Winterley, Sandbach, Cheshire CW11 4TN. nicky.bird1@btopenworld.com
* Bishop, Mr D.G., 21 Brookburn Road, Manchester M21 8FF. davegbishop@aol.com
* Bizot, Mr A., 1 Rue de la Faye, Hannogen-Saint-Martin, 08160, France. arnaud.bizot@wanadoo.fr
* Brennan, Ms D.A., 125 Moss Lane, Timperley, Altrincham, Cheshire WA15 6JG
* Broadbent, Mr D.A., 37 Maple Road, Manchester M23 9HN. dabroadbent@talk21.com
Bryson, Mr D.J., 54 Ferndown, Northwood, Middlesex HA6 1PH. davidbryson@sky.com
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FERN RECORDS

Mike Porter

It has been requested that the BPS again publish new fern distribution records. Following publication of *Atlas of Ferns of the British Isles* in 1978, Matt Busby and Tony Worland published additions and amendments on a 10km square basis in the *Bulletin* until 1981 and in *The Fern Gazette* 1983-1987. Distribution maps on the BSBI website (see link from BPS website) are updated weekly. Only those records sent to the Plant Records Editor are published here.

Twice a year, usually in February and August, the BSBI publishes in its journal *Watsonia* a list of species new to any of the vice-counties of the British Isles. Additionally, those species that have recently been recorded for the first time since 1970 are also published. With the permission of the BSBI, we have selected from these lists the species of particular interest to members of the BPS and these are set out below. These records are drawn from the journals published in 2008 and 2009. It is hoped to publish further records of this kind in the future.

Each entry contains the Latin name of the species as given in *Watsonia* (in bold), the number (in bold) and name of the vice-county, the habitat, the location, a grid reference, the name of the recorder, the year the record was made, (where appropriate) the name of the expert who determined or confirmed the record, (where appropriate) the name of the herbarium where the specimen is lodged (in bold) and (sometimes) a comment giving more information about the plant, its status or its discovery.

NB An asterisk * before the vice-county number indicates a new record for that vice-county.

Azolla filiculoides ***100** (Arran), Clyde Is.: pond at Merkland, NS020383, A.R. Church 1993. Did not persist.

Ceterach officinarum ***67**, S. Northumb.: on urban wall, North Shields, NZ348686, G. & A. Young 2006. **91**, Kincardines.: south-facing dike, Stonehaven, NO862851, D. Welch 2006. 1st record since 1970 at the location previously recorded.

Cyrtomium falcatum ***63**, S.W. Yorks.: wall near R. Don, Sheffield, SK372885, J. Westfold, Sheffield City Ecology Unit 2007.

Diphasiastrum complanatum ***81**, Berwicks.: Dirrington Little Law, Cattleshiel moor, NT6853, J. Hardy 1892, det. E.S. Marshall, *Hist. Berw. Nat. Club* XIV p.17. Found first by Mrs Dodds of Bowden, formerly Miss Sibbald, collected for James Hardy by John Buckham, shepherd to Mr Craw, Rawburn, sent to W.B. Boyd who sent it on to Rev. E.S. Marshall; his reply determines it as *'Lycopodium alpinum* var. *decipiens*, the *L. complanatum* of British authors'.

Dryopteris ×complexa (D. filix-mas × D. affinis) ***64**, Mid-W. Yorks.: woodland on hillside, Otley Chevin, SE213444, B. Brown 2007, det. K. Trewren. **81**, Berwicks.: dean, Nabdean Burn, NT931522, M.E. Braithwaite 2008. Fronds 160cm, winter-green.

Dryopteris ×complexa nothosubsp. **complexa (D. filix-mas × D. affinis** subsp. **affinis)** ***46**, Cards.: shaded roadside bank, 200m NW of Caer-Cadwgan, Cellan, SN614480, K. Trewren, S.J. Thomas & A.O. Chater 2005. 1st Welsh record of nothosubspecies.

Dryopteris ×deweveri (D. carthusiana × D. dilatata) **49**, Caerns.: wet heathy field, Mynydd Cennin, Bryncir, SH4444, W. McCarthy 2006, conf. S.J. Thomas. 1st record since 1970.

Dryopteris affinis subsp. **paleaceolobata** ***110**, Outer Hebrides: road bank next to Loch Sgailler, NB0835, P.A. Smith & J.W. McIntosh 2008, det. K. Trewren, **RBG, Edinburgh (E)**.

Dryopteris affinis subsp. **affinis** ***63**, S.W. Yorks.: Glen Howe Woods, Stocksbridge, SK2994, Yorks. Fern Group 2004.

Dryopteris affinis subsp. **borreri** ***63**, S.W. Yorks.: Glen Howe Woods, Stocksbridge, SK2994, Yorks. Fern Group 2004.

Dryopteris affinis subsp. **cambrensis** ***63**, S.W. Yorks.: Bradfield Dale, Stocksbridge, SK2491, Yorks. Fern Group 2007.

Equisetum ×bowmanii (E. sylvaticum × E. telmateia) ***106**, East Ross: marshy meadow near dense swamp woodland, south side of Loch Ussie, NH55, D.J. Tennant 2006, det. C.N. Page, **RBG, Edinburgh (E)**.

Equisetum ×dycei (E. fluviatile × E. palustre) ***17**, Surrey, on metal enriched substrate by a small stream draining a boggy area, Pirbright Ranges, SU928579, F.J. Rumsey 2008. ***100** (Arran), Clyde Is.: shoreline south of King's Cave, NR8830, C.N. Page 1988. 1st record for Arran and for v.c.100. **100** (Bute), Clyde Is.: raised beach flush, White Port, NS109543, A.C. Hannah 2007. 1st record for Bute. **110**, Outer Hebrides: roadside ditch, Seilebost, NG065968, R.J. Pankhurst 1996, det. H. McHaffie, **RBG, Edinburgh (E)**. 1st record since 1970.

Equisetum ×rothmaleri (E. arvense × E. palustre) ***10**, Wight: on slumped coastal cliffs, Brambles Chine, Colwell, SZ3388, P.D. Stanley 2007, det. P.J. Acock, **herb. P.D. Stanley**. ***49**, Caerns.: edge of cycle track, Pant Glas, SH4647, S.J. Thomas 2006, conf. C.N. Page.

Gymnocarpium dryopteris ***17**, Surrey: TQ05, R. Skipper 2007.

Huperzia selago subsp. **arctica** ***110**, Outer Hebrides: moorland, Grianan, Barra, NF694016, R.J. Pankhurst 2007, det. F.J. Rumsey, **RBG, Edinburgh (E).**

Matteuccia struthiopteris ***62**, N.E. Yorks.: several plants of varying age in damp woodland, originally Victorian planting, by Hodge Beck, Cockayne, Bransdale, SE622985, V. Jones 2003. ***91**, Kincardines.: streamside, Durris House, NO7996, J.S. Murray 1962, **Aberdeen (ABD)**.

Ophioglossum azoricum ***93**, N. Aberdeen: dune slack, Sands of Forvie NNR, NK012260, D. Welch 2007. Possibly previous records of *O. vulgatum* belong to *O. azoricum* which formerly was a subsp. of *vulgatum*.

Osmunda regalis ***31**, Hunts.: wet ditch, Holme Fen NNR, TL1989, D.A. Broughton 2007, conf. T.C.E. Wells. Origin unknown but not planted; colonisation from native source no less likely than non-native source.

Pilularia globulifera **8**, S. Wilts.: pool, Plaitford, SU274173, R. Veall 2005. 1st record since 1892. Had been presumed extinct. **10**, Wight: recently cleared pool, Bouldnor Copse, SZ380902, G.N. Toone 2002, det. A.C. Jermy, **herb. G.N. Toone.** Last recorded 1923, from this area.

Polystichum ×bicknellii (P. setiferum × P. aculeatum) ***64**, Mid-W. Yorks.: limestone pavement, Malham Cove, SD897641, B. Brown 2007.

Polystichum munitum ***58**, Cheshire: dumped soil heap, Marple, SJ945886, P. Owen 2007, det. F.J. Rumsey, **Natural History Museum, London (BM)**.

Polystichum setiferum **31**, Hunts.: ancient woodland, Waresley Wood, TL263546, T. Balbi 2000. 1st record since 1846.

Pteris cretica **17**, Surrey: a large plant on the north-west wall of the railway viaduct, south of Waterloo, Lambeth, TQ309790, N.H. Bertrand 2007.

Pteris multifida ***17**, Surrey: several plants on the wall of South Dock, Rotherhithe, TQ365790, N.H. Bertrand 2008. ***29**, Cambs.: one good-sized plant under grating on the Trinity Street side of Michaelhouse church, Cambridge, TL448585, P.H. Oswald 2006, conf. F.J. Rumsey, **Cambridge (CGE)**.

Selaginella kraussiana ***35**, Mons.: 10 × 2 m on barish patches in grass, below N wall of church, Llangybi, ST373967, S.D.S. Bosanquet 2006. ***38**, Warks.: one metre square patches in rock gardens and palm house, Birmingham City Botanic Garden, SP0485, J.W. Partridge 2007, conf. M.W. Poulton, **Warwickshire Museum (WARMS)**. Well naturalised. Birmingham & Black Country County Flora Project. ***100** (Great Cumbrae), Clyde Is.: lawn behind former Garrison House, Millport Garrison, NS164551, BSBI 2007. Doubtless a long established escape.

MEETINGS PROGRAMME 2010

Meetings Secretary: R.J. Cooke
Meetings Subcommittee: P.J. Acock, R. Golding, N.J. Hards, J.M. Ide, P.H. Ripley, M.H. Rickard

Tues. 2 - Sat. 6 Feb.	**Overseas Field Meeting – Nice, France** Leader: Sebastien Sant
Sat. 10 April	**AGM & Spring Indoor Meeting – Natural History Museum, London** Leader: Pat Acock
Wed. 16 - Sun. 20 June	***BBC Gardeners' World Live – NEC, Birmingham: BPS Stand** Contact: Bryan & Gill Smith
Sat. 10 - Sat. 17 July	**Week Field & Garden Meeting – SW Ireland** Leader: Jim Dennison
Sat. 24 - Mon. 26 July	**Weekend Meeting – Scotland: Argyll gardens** Leader: Frank McGavigan
Fri. 13 - Sun. 15 Aug.	**Weekend Field Meeting – West Wales: North Ceredigion** Leader: Anthony Pigott
Thurs. 19 - Sun. 22 Aug.	***Southport Flower Show: BPS Stand** Further Info.: Michael Hayward
Sat. 4 - Mon. 6 Sept.	**Weekend Meeting – South Yorkshire gardens** Leader: Paul Ruston
Fri. 24 - Sun. 26 Sept.	**Weekend Field Meeting – Northern Lake District** Leaders: Mike Porter & Peter Campion
Sat. 6 Nov.	***Provisional!* Autumn Indoor Meeting – Cambridge** Leader: Sylvia Martinelli

* *Event supported by, but not organised by, the BPS.*

For further details of these and other meetings of interest to members, including information on accommodation, please see the separate Meetings Programme sheet. This can be sent to overseas members on request and is also available on the BPS website.

REGIONAL MEETINGS

Please note: Regional group meetings are open to all members, so if you are travelling through or holidaying in one of the following areas you would be very welcome to join in. For details of meetings please see the BPS website or contact the regional organisers by e-mail, or by post enclosing a stamped addressed envelope.

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